



Dhumdhubi Swaneeyam: The Sound of Wellness A Review Article

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ABSTRACT

Every viral pandemic is harmful to both the global economy and the healthcare system. A traditional medical system such as Ayurveda developed a comprehensive approach for the prevention and effective management of pandemics. As per Ayurveda, the pandemic situation is referred to as Janapadodhwamsa and is primarily influenced by Vayu (air), Jala (water), Desha (habitat), and Kala (seasons). Acharya Susruta specifically mentioned the dhumdhubiswaneeyaadyaya in Kalpasthana for Vayushudhikarana (air cleansing). There, Acharya discussed the keetasaka drugs, which are prepared in the form of ksharapaka and applied to the drum's skin part and beaten. Because of this, oushadaveerya became dispersed throughout the environment with sound, and the sound made by the drum aids in the killing of the keetas (microorganisms) existing in the vayu. Currently, the keetas can even be categorized as insects, worms, or even microorganisms. Based on multiple studies, exposure of microorganisms to different sound frequencies and resonance frequencies inhibited their growth and reduced their population numbers due to biological impacts. Transmission of infections can be easily prevented by simple techniques. Thus, to a certain extent, Dhumdhubiswaneeya, the traditional activities, can be beneficial for enhancing our health and environment.

Keyword: *Pandemic, Microorganisms, Dhumdhubi, Keeta, Janapadodhwamsa, Sound frequency.*

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INTRODUCTION

Microorganisms, often known as microbes, are living things that are invisible to the naked eye. Three types of microorganisms, namely bacteria, viruses, and fungi, have a significant clinical impact on the diseases that have been seen in humans [1]. They are the microbes, and they can spread either directly or indirectly by coming into contact with unsanitary environments. In low- and middle-income countries, poor living circumstances are to be expected, which will increase the prevalence and severity of infectious diseases there. Numerous infectious diseases, including tuberculosis, cholera, and malaria, have spread over substantial geographic areas, creating health issues for a huge part of the population. These diseases are spreading rapidly due to the development of medicine resistance, the mosquito vector's tolerance to insecticides, poor sanitation, changes in land use and climate, as well as increased human mobility and travel. India is the leading country in tuberculosis, contributing almost 26% of the disease's burden globally [2]. Historically, viruses have been considered the biggest threat to a pandemic. The influenza viruses that cause the seasonal flu spread throughout the world and cause acute respiratory infections. There are two seasonal influenza peaks in India each year: one from January to March and the other following the monsoon season. In India, 44,691,956 confirmed cases of COVID-19 with 530,789 fatalities have been reported to the WHO from January 3, 2020, to March 16, 2023 [3]. Every viral pandemic is harmful to both the global economy and the healthcare system. The vaccinations have many restrictions because different viral strains have genetic structures that differ from one another and a tendency to mutate, making them ineffective against emerging strains. In conventional medicine, there are few effective ways to improve the host defense system outside of vaccination. As a result, traditional medical systems such as Ayurveda developed a comprehensive approach for the prevention and effective management of such pandemics. Traditional medicines are a valuable resource for designing treatments that are beneficial for a variety of diseases. Acharya Susruta has described Keeta in his Samhita after the chapters on snakes (Sarpa DanshtaVishaVigyaniya) and rodents (Mooshika Kalpa). These might or might not be visible to the naked eye, according to definitions. They could therefore be seen as germs, worms, or even insects. In this great classic, the eighth chapter of KalpaSthana provides a thorough explanation of KeetaVisha, along with its

classification, symptoms, and management [4]. As per Ayurveda, the pandemic situation is referred to as Janapadodhwamsa and is primarily influenced by Vayu (air), Jala (water), Desha (habitat), and Kala (seasons) [5]. The symptoms of Janapadodhwamsa Vikara include cough, common cold, body ache, fever, and respiratory symptoms, which are also prevalent in current pandemic situations. The Ayurveda Samhita describe various methods for purifying Vayu, Udaka, Desha, and Kala, including dhupana (fumigation), kshalana (washing), prokshanam (spray), oushadapataka (medicated flags), oushadadhumbhubi (medicated drum beats), etc.⁶Acharya Susruta specifically mentioned the dhumbhubiswaneeyaadyaya in Kalpasthana for Vayushudhikarana (air cleansing). There, Acharya discussed the keetasaka drugs, which are prepared in the form of ksharapaka and applied to the drum's skin part and beaten. Because this oushadaveerya became dispersed throughout the environment with sound and the sound made by the drum aid in the killing of the keetas (microorganisms) existing in the vayu [7]. The present work is a critical appraisal of available scientific evidence on Ayurvedic measures and interventions such as dhumbhubiswaneeya, narrated in Ayurvedic texts, which can be helpful in the prophylaxis and management of viral diseases. This review attempts to provide an informative analysis of the Dhumbhubiswaneeya method recommended in Ayurveda scriptures which can be helpful for the prevention and treatment of viral pandemics.

MATERIALS AND METHODS

In the interest of understanding the Dhumbhubi technique and its effects, a thorough review of SusrutaSamhita was carried out as part of the quest for classical literature. One of the earliest, most reliable, and most commonly used texts on Ayurveda is the SusrutaSamhita. The particular point that Acharya addressed separately in Chapter Six of the KalpaSthana and the book dealing with the process of creating OushadayukthaDhumbhubi and managing VayuMalinikarana (air pollution).

In the 47th chapter of Utharasthana, titled VishopadravaPrathisheda, Acharya Vagbhata explains DhumbhubiPrayoga in AshtangaSamgraha.

A recent research investigation demonstrated that sound waves can disintegrate luminous microorganisms. The official websites of national health organizations as well as electronic databases including PubMed, the AYUSH Research Portal, and the Digital Helpline for Ayurveda Research Articles, Google Scholar, and others were searched for research findings.

DISCUSSION

Countless people have died as a result of epidemics, which have also occasionally caused demographic calamities and even occasionally altered the course of history. Epidemics, whether they are associated with bacterial illnesses like cholera and bubonic plague or viruses like smallpox, influenza, and HIV/AIDS, have had a significant impact on human history since prehistoric times due to their rapid spread and high fatality rates. The authorities were forced to take only sanitary precautions to prevent the spread of these diseases very early on due to a lack of understanding about the diseases that caused these epidemics and their routes of transmission [8]. The causative factors of disease may be classified as agents, factors, and environments. These three factors are referred to as the epidemiological triad. The mere presence of an agent, a host, and favorable environmental factors in the pre-pathogenesis period is not sufficient to start the disease in man. What is required is an interaction of these three factors to initiate the disease process in man.⁹The environment is the broader point of infection. There are two key steps that need to be taken in order to free the ecosystem from this. One is to eradicate the organisms that reproduce the germs and eliminate those that remain in the environment. Second, restore the environment to a healthy state by cleaning it up.

So according to Ayurveda, the pandemic situation is known as Janapadodhwamsa and is primarily influenced by Vayu, Jala, Desha, and Kala. Modern science has similarly described pandemic infections as fatal, and Janapadodhwamsa was viewed as a maraka. The germs that are present in the environment and the mosquitoes, flies, and other organisms that spread disease will be eliminated by the purification of Vayu, Udaka, Desha, and Kala. In conventional medicine, the focus of the management of many viral infections has continued to be supportive rather than symptomatic care. Antiviral chemotherapy, which combines immunomodulators, antiviral drugs, and veridical agents, is the treatment option. Even so, the effectiveness of these medications is limited, as seen by the high morbidity and mortality caused by viral diseases. For the maintenance of a healthy state and the prevention of diseases, Ayurveda recommends Dinacharya (a daily regimen), Rithucharya (a seasonal regimen), SadvrittaPalana (excellent conduct), and Rasayana (rejuvenation procedures) [10].

Although Acharya Susruta focuses mostly on surgery, he also demonstrates his mastery of other subjects like visha. For this specific area of toxicology, which he has termed the "KalpaSthana," he has assigned an entire portion of eight chapters. In this great classic, the eighth chapter of KalpaSthana contains a detailed explanation of Keeta Visha.¹¹Keetas are formed from the snakes' excretions, such as their urine and faeces

[12]. According to Vaachaspatya, Keeta is a kind of Krimi with a macroscopic body, or "Krimibhyah SthooleKshudrajantu Bhede [13].

Currently, they can even be categorized as insects, worms, or even microorganisms. Understanding the complex scenario that has arisen in the human habitat and applications like Dhupana, Kshalana, Prokshana, OushadaPataka, and OushadaDhumdhubi is essential for attaining solutions [14].

The sixth chapter of KalpaSthana describes a unique prevention technique called Dhumdhubiswaneeyam. Treatment using the trumpet's sound is detailed in this chapter [15].

It is advised in this chapter to prepare the medicines from Dhanaswakarna Yoga or Ksharaagada Yoga in accordance with Ksharapakavidhi and apply them to drums or trumpets. Acharya Vagbhata in AshtangaSamgraha, DhumdhubiPrayoga is explained in the 47th chapter of Utharasthana, named Vishopadrava Prathisheda [16].

The SusruthaSamhita mentions the 75 ingredients used to prepare Ksharagada, including Bhasma, made up of 38 drugs, Churna, made up of 37 drugs, and 1 Dravadravya. It is formed into the form of a churna. According to AshtangaSamgraha, 59 ingredients are used to prepare Ksharagada, including 1 Dravadravya, 31 drug Churnas, and 28 drug Bhasmas. It's also prepared in churna form. According to SusruthaSamhita and AshtangaSamgraha, it is administered both internally and externally. When applied externally as lepa to Dhumdhubi, it functions as Drushyagada, Shravyagada, and Sparshagada to mitigate the adverse consequences of poison [17].

The majority of the ingredients in Ksharagada contain katu, tikta rasa, ushnaiveerya, katuvipaka, Kusthaghna, vishaghna, deepaniya, and krimihara karmas. These drugs are highly effective and have been correlated with anti-oxidant, anti-inflammatory, hepatoprotective, anti-mutagenic, anti-bacterial, and anti-helminthic activities [18].

When the instrument is played, the anti-poison formulations that were prepared and pasted on the drums or dhumdhubi produce a loud noise that would disperse the anti-poison medicines through sound waves to remove the poisonous environment. The drugs administered in this method reduce airborne microorganisms and are useful in the prevention and treatment of infectious and communicable disorders. These types of experiments can be carried out for a healthy environment. By beating the drums in this manner, the disinfectants applied to them are transmitted along with the sound waves according to their frequency. So, that area can be somewhat sterilized.

The Rig Veda, the oldest book in history, contains a lot of fascinating information regarding musical instruments. 1700 years after the Rig Veda, Sangam Tamil literature gives additional fascinating information on drums. The Bhagavad Gita begins (1—12 to 19) with musical instruments that were used on the battle field! "Conches, kettledrums, tabors, drums, and trumpets blared forth, and the noise was tumultuous. And the terrible sound, echoing through heaven and earth, rent the hearts of Dhrtarashtra's sons". The commotion it produced on the battlefield can be visualized when we read this description. Dhumdhubi is an onomatopoeic word: Dum Dum = dumdumhubi = drum (The English word drum must have come from this). Dhumdhubi is mentioned in some parts of Atharva Veda, which is one of the Vedic literature and Ayurveda sastra is considered as its Upaveda [19].

Dhumdhubi is AvanadhaVadya. Animal skin was used to cover a hollow body to create these drum-like devices. A sharp, resonant sound that may travel quite a distance is produced by the instruments. Nagara, which is used in religious devotion and leads processions of temple deities, is one of the oldest percussion instruments still in use. It is similar to dhumdhubi [20]. Drums give off different frequencies, but the most prominent ones that we hear are the fundamental and first overtone vibration frequencies of the drumhead itself. The majority of drums in a common drum kit have a fundamental frequency that ranges from 50 to 250 Hz, depending on their size, type of drumheads, and tuning.²¹ Therefore, in the absence of Dhumdhubi, we can inhibit the growth of airborne bacteria by using the drums that are available now. The term "airborne microbes" refers to biological airborne contaminants (also known as "bio aerosols") such as bacteria, viruses, or fungi, as well as airborne toxins that are transmitted from one victim to the next through the air without physical contact and can at the very least cause irritation. An important factor in the improvement of environmental conditions is the sound wave. In the natural setting, microbes typically "interact" with a range of sound waves and undergo transformation. Drums produce a mechanical sound wave that is a significant environmental element. Mechanical sound waves can be roughly divided into three categories based on their frequency: infrasound (104–20 Hz), audible sound (20–2–104 Hz), and ultrasound (2–104–1012 Hz). The biological impacts of ultrasound and its biophysical mechanisms have been studied recently. The impact of airborne sound waves on the development of microorganisms within temple grounds was examined in a study. Sound produced by bells is a pressure mechanical wave which traverses throughout the temple premises. According to the findings, the bell sound produced at various frequencies considerably slowed down the growth of microorganisms. This clearly implies that exposure to high sound waves inhibited growth and decreased population numbers due to biological effects [22].

According to research on corona viruses and resonance frequency, the amplitude of the vibration would rise under resonance conditions, having an impact on the viruses' outer sheaths as well as their tumors. As a result, the viruses are largely destroyed at this point [23].

In a different study titled "Some Effects of Sound and Music on Organisms and Cells," it was discovered that in unicellular organisms, "audible sound in the form of music" could have an impact on the development, metabolism, and susceptibility to antibiotics of bacteria (prokaryotes) and yeast (eukaryotes). The studied microorganisms had partially damaged cell membranes, while the cells subjected to sound had thicker cell walls overall [24].

PulluvanPattu is a form of serpent worship performed in Kerala and is expressed in the background of snake-worship, ghost worship and magic. Most of the songs are related to worship, ritual, custom and exorcism. The musical instruments used by the Pulluvar are pulluvanveena (a one stringed violin), pulluvankutam (earthenware pot with a string attached) and thaalam (bell-metal cymbals). The ceremony's main objective is thought to be to disinfect the environment, although it is also believed to bring peace to the family and get rid of naga dosha [25].

The Dhol is one of the commonest percussion instruments in India, and the Chendavadya is a well-known cylindrical drum of Kerala. Another instrument named Dholak is played with the hands and used throughout India in folk music, dance, festivals and ceremonies. The Nagara are a very familiar drum throughout North India and is used in folk dramas, marriage and religious processions. The Taval of South India is another avanaddhavadya used for temple festivals as well as auspicious functions. These are some of the instruments that we can see and enjoy in present generation. If we pay attention to one thing, we will realize that all of these instruments are used in a function or festival where group of people are present. It might have been a purpose in the past to purify the location where so many people participate, in addition to the enjoyment of the sound from these [26].

However, the exact mechanism of the acoustic sound wave effect on microbial growth is still totally unknown. Those who are interested in research related to this subject can study using the dhumdhubi or other similar instruments as explained in Ayurveda. If it can be proved scientifically, it will be good knowledge and benefit of our society and the modern world.

In the modern approach, various chemically based methods are invented for sterilization settings, which eventually lead to other adverse effects. The scientifically supported traditional Dhumdhubiswaneeya method is inexpensive, simple to use, and extremely safe for eradicating microbiological contaminations.

CONCLUSION

The maintaining of environmental hygiene is essential in this pandemic era. Transmission of infections can be easily prevented by simple techniques. The Vedic concept of acoustics (Dhumdhubi method) is clearly more beneficial and useful for people and the environment as a whole because it has no harmful side effects and doesn't require the use of chemicals or excess manpower. Thus, to a certain extent, these traditional activities can be beneficial for enhancing our health and environment. Further studies and research on this topic would also be an asset to public health.

Conflict of Interest: No conflict of interest

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