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Traditional Knowledge and Indigenous Method of Water and Health Resources in Rural India: A Historical Analysis-An Overview

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Abstract

Traditional knowledge refers to the knowledge, innovations and practices of indigenous and local communities around the world. Traditional knowledge is transmitted orally from generation to generation and experience gained over the centuries and adapted to the local culture and environment. It tends to be collectively owned and takes the form of natural, traditional oriented, herbal items, cultural values, and agricultural practices, including the development of plant species and animal breeds. Traditional knowledge is mainly of a practical nature, particularly in such fields as agriculture, health, and environmental management. It explores the various ways in which Indigenous communities have adapted to changing environmental conditions, including the use of traditional irrigation systems, rainwater harvesting, and water-sharing arrangements. Protecting the water and preserving the environment is to reduce diseases of healthy ecosystems. In rural area, health-related ecosystems and environmental related situations have always been a major source especially in human behaviour and bringing advantages like nutritional food, maintaining of environmental pollution, and the habitats of human needs. At all situations, the researcher examines the overall traditional knowledge of indigenous method for identifying the pathways of full-filling the welfare needs.

Keywords: Health, water, and environment

Introduction

Water has been a crucial aspect of health in rural India for centuries. Historically, people in rural areas of India have depended on local water sources such as ponds, wells, and rivers for drinking and domestic use. In the pre-independence era, the British colonial government initiated public health measures to combat waterborne diseases in rural India. This included the construction of wells, canals, and reservoirs to improve access to clean water. After independence, the Indian government made efforts to improve access to clean water in rural areas through various schemes and programs. The most notable of these was the Swachh Bharat Abhiyan, launched in 2014, which aimed to provide access to clean water and sanitation to all rural households in India by 2024. Despite these efforts, the problem of poor access to clean water persists in many rural areas of India, particularly in remote and marginalized communities. The lack of adequate infrastructure, water scarcity, and pollution of water sources continue to be major challenges to public health in rural India. Overall, the historical analysis of water and health in rural India highlights the need for continued efforts to improve access to clean water and sanitation.

Traditional knowledge system represents information, knowledge, skill and technology along with standard management practices, which are defined through the cultural systems and values. In the contemporary world when human civilization is facing the challenges of climate change, natural disaster, biodiversity loss, nutritional inequality, problems of sanitation and health. Traditional knowledge refers to the knowledge, innovations and practices of indigenous and local communities around the world. It also gained over the centuries and adapted to the local culture and environment, traditional knowledge is transmitted orally from generation to generation. It tends to be collectively owned and takes the form of cultural values, beliefs, rituals, and agricultural practices. In rural area, health-related ecosystems and environmental related situations have always been a major source especially in human behaviour and bringing advantages like nutritional food, maintaining of environmental pollution, and the habitats of human needs. Public health has always been a major factor influencing the ways how water supply has been solved by societies. Traditional knowledge and indigenous methods are a crucial aspect of sustainable use of resources for clean, green and happy living in rural areas. The relationship between water

and health has been known to indigenous people for thousands of years, and their practices can provide valuable insights into how to sustainably manage this vital resource. Indigenous communities have always lived in harmony with nature, and they have developed a deep understanding of the environment and its resources. In many parts of the world, they have been the custodians of water resources and have practiced traditional methods of water management, such as rainwater harvesting, irrigation, and water storage.

A safe and convenient water supply is of paramount importance to human health and the well-being of any society. These rural populations of developing countries adopt some techniques with a low level of mechanization to suit their own situation. The special features involved in such traditional treatment methods are worth considering for dissemination, before general technological solutions based on wider experience are proposed for these communities. This article collates some of these traditional and household techniques that are widely used in rural areas of developing countries and also some of the water treatment techniques that have been developed, especially to cater for households of these communities.

Objectives

- To study the traditional knowledge of water and health by using of indigenous method in rural India.
- To assess the perception and practices related to water and health in rural India.

Methodology

In this paper, the study identified the historical scenario of traditional water and health resources. This study is based on secondary data. The secondary data collected from various government sources like UNICEF, World Health Organization (WHO), United Nation Environment Programme (UNEP). It is the method of qualitative analysis. By using of Anthropological Approach, this study seeks to provide a holistic perspective on the economy, social, and environment. After depicting the current situation of natural water resources and traditional health facilities the study attempted access to find various perceptions and practices related to water and health. Following an analysis, the researcher examined the historical analysis especially in rural area.

Review of Literature

Kaur, N., Kumar, V., & Kumar, A. (2019) Indigenous water management practices focuses on the indigenous water management practices in rural India. The authors discuss traditional methods of water harvesting, storage, and conservation, as well as the role of community participation in water management. It also highlights the need for integrating indigenous knowledge systems with modern water management practices for sustainable water management. George, S., (2018) "Traditional knowledge systems in water management practices in Kerala: a review" depicts that traditional water harvesting techniques, community-based water management practices, and the role of indigenous knowledge in sustainable water management. The article emphasizes the need for integrating traditional knowledge systems with modern water management practices for sustainable water management. Overall, these literature reviews highlight the importance of recognizing and incorporating indigenous knowledge systems in water and health management policies and programs in rural India.

Traditional knowledge and indigenous methods of water and health management have proven to be sustainable and effective over the years, and their preservation and promotion are critical for achieving sustainable development goals in the rural areas of India. Indigenous knowledge and practices related to water and health in rural India: a review" by Sushil Kumar *et al* (2014). This review covers traditional practices related to water and health, including the use of medicinal plants, traditional medicine, and yoga, and highlights the need for preserving and promoting indigenous knowledge for sustainable development in rural India.

Anthropological Approach

Anthropological approach would be useful to understand how traditional knowledge and indigenous methods have been passed down through generations and how they are still being practiced today. This would involve studying the social and environmental contexts in which these practices are embedded, as well as the beliefs and values that underpin them.

Rationale of the Study

Historical Resources of Water

Building check dams-Check dams are small earthen dams built across streams or other water resources to slow down the flow of water and increase the infiltration of water into the ground. This helps in recharging the groundwater level, which is crucial for maintaining water availability in rural areas. It also helps in groundwater recharge and also reduces soil erosion. **Creating percolation tanks**-Percolation tanks are excavated in the ground to collect rainwater and allow it to percolate into the soil. This helps in improving the groundwater table and provides a reliable source of water for groundwater-dependent crops. **Constructing wells and bore wells**-It is another traditional method of accessing groundwater in rural areas. These wells need to be carefully planned and located to ensure that they don't deplete the groundwater resources. **Using traditional water harvesting structures**-Many traditional water harvesting structures are still in use of rural India, such as Ooranis (tank systems), Kattas (check dams), and Zings (diversion channels). These structures are designed to capture and store rainwater and surface runoff, which can then be used for irrigation, drinking, and other purposes. **Rainwater harvesting**-This involves collecting and storing rainwater during the monsoon season for use throughout the year. This can be done using a variety of methods, such as building check dams, percolation tanks, and rooftop rainwater harvesting systems. **Bawdis**-are traditional step-wells found in many parts of India. They are designed to collect and store rainwater, and can be used for irrigation and other purposes. **Khadins**-are traditional rainwater harvesting systems used in arid and semi-arid regions of India. They involve digging small earthen embankments across the slope of a hill to collect and store rainwater, which can be used for irrigation. **Rooftop rainwater harvesting**-This involves collecting rainwater from rooftops using specially designed channels and storing it in tanks or underground reservoirs. This method is particularly useful in urban areas where space is limited. **Farm ponds**-Farm ponds are small, artificial ponds dug on agricultural land to store rainwater for irrigation and other purposes. They can also help in groundwater recharge.

These indigenous methods of water management have been used for centuries in rural India. They are low-cost, sustainable, and well-suited to the local environment and

culture. Overall, indigenous methods of water conservation have proven to be effective in improving water availability and sustaining rural livelihoods in India.

One example of traditional water management in rural India is the concept of 'bunds.' A bund is a small earthen dam built across a stream or river to create a reservoir for irrigation. The idea has been practiced in India for centuries and has been critical to the development of agriculture in the country. The use of bunds has allowed farmers to manage the water supply, regulate the flow of water, and prevent soil erosion, thereby increasing crop yields. Similarly, the practice of rainwater harvesting is another traditional knowledge system that has been used in rural India for centuries. In its simplest form, rainwater harvesting involves the collection of rainwater for future use. This practice has been critical in preserving water resources in arid regions of the country, where water scarcity is a common problem. The traditional knowledge of water management practices can be analyzed historically to understand the evolution of rural communities in India. For example, the rise of irrigation systems and the use of bunds can be linked to the growth of agriculture and the expansion of rural economies. Overall, traditional knowledge of water management practices is an invaluable resource for historical analysis in rural India. By studying these practices, we can gain a deeper understanding of the complex social, economic, and environmental factors that have shaped rural communities in India over time.

Historical Resources of Health

Historical resources that provide insights into healthcare practices and beliefs in rural India like Ayurveda-This is an ancient system of medicine that has been practiced in India for thousands of years. It is based on the idea that health and wellness depend on a delicate balance between the mind, body, and spirit. Ayurveda uses a combination of herbs, minerals, and other natural substances to promote healing and prevent disease. Folk medicine-Many rural communities in India have their own traditional forms of medicine that have been passed down through generations. These practices often involve the use of herbs, spices, and other natural remedies to treat common ailments. Yoga and meditation-Yoga and meditation have been practiced in India for thousands of years and are considered important for maintaining good health and well-being. Many rural communities still practice these ancient disciplines as part of their daily routine. Siddha medicine-Siddha medicine is a traditional system of medicine that is practiced in southern India. It is based on the idea that the body is made up of five elements (earth, water, fire, air, and space) and that disease arises when these elements are out of balance. Siddha medicine uses a combination of herbs, minerals, and other natural remedies to restore balance and promote healing. Unani medicine-Unani medicine is a

traditional system of medicine that was developed in ancient Greece and later introduced to India by Arab traders. It is based on the idea that the body has four humors (blood, phlegm, yellow and black bile) and that disease arises when these humors are out of balance.

Overall, these historical resources provide a rich and diverse set of healthcare practices and beliefs that have helped to shape healthcare in rural India over the centuries.

Indigenous Methods of Health

Indigenous methods of health have been used in rural India for centuries. These methods include a combination of traditional medicine, lifestyle practices, and belief systems that are specific to the culture and environment of the region.

One important method that has been used for generations is Ayurveda, which is an ancient Indian system of medicine. It is based on the idea that the body and mind are interconnected and that health is achieved by maintaining balance between the two. Ayurvedic practices may include herbal remedies, massages, yoga, and dietary recommendations. Another indigenous method of health is traditional healers or witch doctors, which use a combination of herbal remedies, rituals, and spiritual practices to heal a variety of illnesses. These healers are often seen as an important resource in rural areas where access to modern medical facilities is limited. Along with these practices, rural communities in India also place a strong emphasis on preventative healthcare. This includes staying physically active, eating a balanced diet, and avoiding unhealthy habits like smoking and excessive alcohol consumption.

Overall, the use of indigenous methods of health in rural India reflects a deep connection to traditional beliefs and practices that have been passed down through generations. While these methods may be viewed as alternative to modern healthcare practices, they remain an important resource for many people in rural areas who lack access to adequate medical care.

Traditional Value and Ethics

Traditional Value and Ethics is linked to traditional cultural practices which prioritize dos and don'ts in the aspects in relation to natural resource like harvesting and conservation. During the process, it evolves the concept of practices like manage human habitation, controlling human practices related to water and health like restriction of junk foods, restriction of waste disposal. Exploration and documentation of such practices in local context will help in understanding these practices, creating a knowledge base and analysis and validation of its natural base. This will help to identify the prospects for the future adopting way of lifestyles, habitats, natural environment protection and natural resource management.

Framework Analysis of Traditional Knowledge System

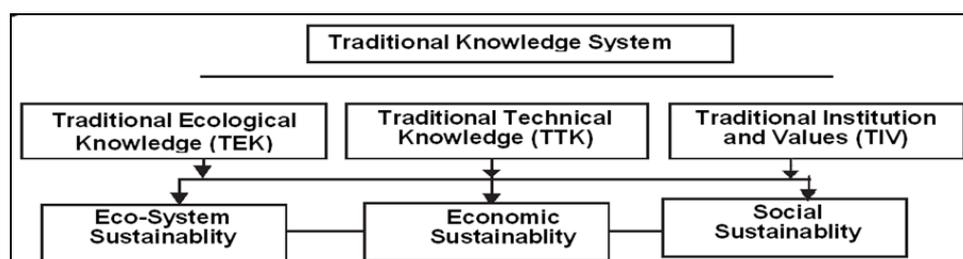


Fig 1: Framework Analysis of Traditional Knowledge System

Traditional knowledge and indigenous methods of water and health have been practiced for centuries by indigenous communities in rural areas. These practices ensure the sustainability of the eco-system, economic sustainability, and social sustainability.

Eco-System Sustainability: Indigenous communities have a close relationship with the environment and have developed methods to coexist with nature. They have great knowledge about their surroundings and how to use natural resources without causing harm to the eco-system. Traditional practices such as rainwater harvesting, watershed management and plant diversity cultivation help to conserve and protect the natural environment. These methods promote the sustainable use of water and other natural resources for generations to come.

Economic Sustainability: Indigenous people depend heavily on natural resources for their livelihood. They have developed various economic activities such as fishing, hunting, and farming practices that are sustainable and equitable. Traditional knowledge of plants and their medicinal properties is also important for the local economy. The use of natural resources for economic benefit is done with careful consideration to ensure that there is no overuse also avoiding exploitation.

Social Sustainability: Indigenous communities have a strong social organization and culture that has been passed down from generation to generation. Traditional knowledge and practices promote social cohesion, respect, and harmony within communities. For example, the traditional practice of water sharing ensures that everyone has access to clean water, and the practice of sharing food ensures that everyone has enough to eat. These practices promote social equity, which is important for the overall well-being of the community. In conclusion, traditional knowledge and indigenous methods of water and health play a crucial role in sustainable development. These practices promote eco-system sustainability, economic sustainability, and social sustainability, all of which are essential for the well-being of indigenous communities worldwide.

Traditional Ecological Knowledge (TEK): Refers to the indigenous and local knowledge developed by people over time and passed down through generations through oral traditions, practices, and customs. The traditional knowledge and indigenous methods of water and health in rural areas are an essential aspect of TEK. Here are some examples:

1. **Water Conservation:** Indigenous people have developed unique ways to conserve water in arid and semi-arid regions, where water is scarce. For instance, the construction of artificial ponds and dams to store water during the rainy season for use during the dry season.
2. **Water Purification:** In many rural areas, people still rely on traditional methods of water purification. These methods include boiling water, filtration through sand and charcoal, and the use of medicinal plants to purify the water.
3. **Medicinal Plants:** Indigenous people have a rich knowledge of medicinal plants and their therapeutic properties. They use these plants to prevent and cure various ailments, including water-related diseases like diarrhea and cholera.
4. **Water Rituals:** Indigenous people have developed spiritual and cultural rituals around water use, which promotes respect and conservation of this precious resource. It also promotes awareness about the importance of clean and safe water for health and well-being.

5. **Knowledge Transfer:** Traditional ecological knowledge is mainly transmitted through oral traditions and community practices. Indigenous people use storytelling, songs, and ceremonies to transfer knowledge from one generation to the next. This creates a sense of continuity and connection to the land, water, and cultural heritage.

Traditional Technical Knowledge (TTK) on water and health in rural communities usually involves the use of natural resources and traditional practices to provide safe drinking water and prevent diseases. One example of traditional knowledge is the use of natural filtration systems to purify water. These systems include the use of sand filters, bio-sand filters, and gravity-fed filters that use layers of rocks, sand, and gravel to remove impurities from the water. In addition, traditional knowledge often involves the use of medicinal plants and herbs to prevent and treat illnesses. Many indigenous communities have extensive knowledge of herbal medicine and use these plants to treat common diseases such as cold, flu, and gastrointestinal disorders. Other traditional practices include hygiene practices such as hand-washing with soap and the use of latrines to prevent the spread of disease. Traditional knowledge also involves the use of communal water sources such as wells and springs, which are often managed and maintained by the community.

Overall, traditional technical knowledge related to water and health in rural areas is an important aspect of indigenous culture and can provide effective solutions to problems related to water access and sanitation. Traditional knowledge and indigenous methods of water and health has been the cornerstone of the rural aspect of traditional institutions and values for centuries. Indigenous communities have always relied upon local knowledge, passed down from generation to generation, to ensure access to safe drinking water and maintain good health. In many indigenous communities, water is considered sacred and is viewed as the source of life. The traditional knowledge of water management and conservation practices has been developed over thousands of years to ensure that this precious resource remains accessible for future generations. Indigenous people have developed sophisticated techniques for water storage, irrigation, and purification, using natural resources such as soil, rocks, and plants. In addition to the management of water resources, traditional methods of healing and health maintenance also play a significant role in rural communities. Indigenous healers and medicine men and women have extensive knowledge of local plants and their medicinal properties, as well as other natural remedies that have been used for centuries to treat various ailments. These healing practices are often rooted in spiritual and cultural beliefs that emphasize the interconnectedness of all living beings.

Traditional Institutions, such as community councils and tribal leaders, also play a critical role in water and health management in rural settings. These institutions are often based on fundamental values such as respect for nature, community, and spirituality. They provide a means for communities to collaborate and make collective decisions, ensuring that resources are managed sustainably and equitably.

In conclusion, traditional knowledge and indigenous methods of water and health have played a central role in rural societies for generations. These practices are based on deep spiritual and cultural values that prioritize the well-being of individuals, communities, and the natural environment. As we face increasing challenges to our water and health systems,

we can learn valuable lessons from these time-tested practices and strive to integrate them into our modern approach to sustainability.

Conclusion

In conclusion, traditional knowledge and indigenous methods of water and health have played a vital role in the historical perspective of rural India. These methods have been developed over centuries of experience and observation, and have been passed down through generations. Indigenous practices include using natural sources of water like rivers, lakes, and wells, as well as traditional water conservation methods such as building tanks, bunds, and check dams. These practices have helped rural communities to conserve water, maintain a sustainable water supply, and ensure access to clean drinking water. Similarly, traditional health practices have been used to prevent and treat illnesses, including herbal remedies, massage therapy, and yoga. These practices of traditional knowledge and indigenous methods have also been proven to be effective in promoting sustainable development and promoting the better health of rural communities. It has been an important part of rural life and has helped to maintain the health and well-being of rural communities. Indigenous communities also have an understanding of the medicinal properties of natural resources, including plants and water sources. They use traditional knowledge to treat various illnesses and prevent diseases by using clean water sources and avoiding contamination of water resources.

However, in recent times, these traditional practices have been challenged by modernization and the introduction of new technologies. As a result, there is a need to preserve and promote traditional knowledge and indigenous methods to ensure that they continue to be an important part of rural life.

In conclusion, the traditional knowledge and indigenous methods of water management and health can play a crucial role in the sustainable use of resources in rural areas. By combining these traditional practices with rural communities can ensure that their resources are managed in a sustainable manner and improve their overall health and well-being. Overall, the traditional knowledge and indigenous methods of water and health in rural India offer valuable insights into sustainable living and holistic approaches to health that can be adapted and applied in other contexts around the world.

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