

## **Significance of Traditional Knowledge in Modern Medicine Making and Health Care System in India**

**Author 1- Meghna Biswas,**

Research Scholar, Christ (Deemed to be University), Delhi NCR

**Author 2- Dr. Ramesh Kumar,**

Associate Professor, Christ (Deemed to be University), Delhi NCR.

### **Abstract**

Modern knowledge is a result of aboriginal people's knowledge and this has taken a shape of technological advancement over the years. This research paper elucidates the significance of the traditional knowledge when it comes to medicine making in the modern era. There has always been an ongoing debate as to which is one better, the traditional medicines or the modern medicines. This research paper tries and explains that despite the age of science and innovations, there is an importance of the knowledge of the indigenous communities while talking about a cost effective health care system in India. The paper introduces to the concept of traditional knowledge which in itself is not a new notion and had been there with us from long term. The paper then takes a dig into attempts made by the Indian government in order to protect and conserve the traditional knowledge in medicine making and also otherwise. In addition, various national legislations have been described but still there is a need to have a channelized legal system for the purpose of connecting modern medicines with the traditional medicines. To sum up, the paper concludes that traditional knowledge is important in the development of new medicines and both can work together effectively as well as efficiently.

**Keywords:** drug discovery, traditional medicines, modern medicines, bio diversity, health care system.

### **Introduction of the Concept of Traditional Knowledge**

The concept of traditional knowledge is so extensive that a single definition of the term is unfeasible and impractical. Traditional knowledge can be defined as a network of knowledge, beliefs and traditions intended to preserve, communicate, and contextualize indigenous relationships with culture and landscape over time. The whole conceptualization of traditional knowledge is to preserve the skills and proficiencies of the past generations. Traditional knowledge is knowledge, know how, skills and practices that are developed, sustained and passed on from generation to generation within a community, often forming part of its spiritual or cultural identity. Traditional knowledge can be described as the wisdom developed over many generations for knowledge consumption in terms of natural resources and environment. The term traditional knowledge is self-explanatory in nature. It comprises of two words Tradition and Knowledge. Tradition means a custom, belief or way of doing something that has continued from the past to the present whereas the term knowledge means a skill that have been gained through leaning or experience. Clearly, by the way of understanding the two terms one can reach to a conclusion that the term traditional knowledge involves generations and experience. In other words, it can be stated that an experience or a practice that is passed on

from one generation to another generation over the period of time is termed as Traditional Knowledge. Often the term is associated with the ideas and skills of the indigenous people. A Traditional knowledge becomes the identity of a community that is involved in a certain kind of practice from such a long term.

In India, there are 705 ethnic groups officially recognized as 'Schedule Tribes'. In central India, the Schedule tribes are usually referred to as Adivasi, which literally means Indigenous people. The largest population of indigenous people are found in the seven north eastern states of India. Since these indigenous people usually reside in the forest areas, this is the reason why they are close to the natural habitat. Their livelihood and functioning is primarily dependent upon the natural resources available in the forest areas. Traditional knowledge is mainly of a practical nature, particularly in the fields like agriculture, fisheries, health, horticulture, forestry and environmental management in general.

A traditional knowledge is all about survival techniques which connects an individual to nature. Traditional knowledge is always associated with a community. An individual has nothing to do when it comes to Traditional knowledge. A single individual does not have a right over a traditional knowledge, it is a collective right of whole of the community. There are different categories of a traditional knowledge which can be enumerated as follows-

- a) **Artistic Knowledge:** This is a kind of traditional knowledge which includes a community's skills and talents to create an art work such as paintings, drawings, sculpting. Patachitra (Native art of Orissa that depicts Hindu epics), Cane craft (Native art of North east India), Gond art, Bengal pat, Calamari etc. are some of the examples where the indigenous community uses their artistic traditional knowledge and create native crafts.
- b) **Ecological Knowledge:** Traditional ecological knowledge, also called by other names including Indigenous knowledge or Native Science, refers to the evolving knowledge acquired by indigenous community through direct contact with the environment. It is the knowledge gained through personal observations of the local ecosystems.
- c) **Medicinal Knowledge:** It frequently refers to medical knowledge developed by indigenous cultures that incorporates plant, animal and mineral-based medicines, spiritual therapies and manual techniques designed to treat illness or maintain wellbeing.
- d) **Agricultural Knowledge:** This category of traditional knowledge stands on almost the same footing as the ecological traditional knowledge. This involves the traditional techniques and tools used by the indigenous people during the farming process. Understanding the ITK will help sustain farming practices preventing plant genetic erosion and environmental deterioration.
- e) **Cultural Knowledge:** This knowledge is usually owned and takes the form of folk stories, folksongs, folklore, proverbs, cultural values, beliefs, rituals, community laws, local language.
- f) **Sacred Knowledge:** Secret traditional knowledge is traditional knowledge that is held and regarded as secret by applicable indigenous peoples and local communities beneficiaries in accordance with their customary laws, protocols.

Each and every community has their own traditional knowledge. This is what make them different from other communities. Traditional Ecological Knowledge is a body of knowledge and beliefs transmitted through oral tradition and first-hand observation. A traditional knowledge is traditional because it aims at preserving the traditions of the communities. Traditional Knowledge includes biological usages, medical treatment of various kinds with the help of various natural resources, agriculture. It includes aesthetical and functional aspects. Traditional Knowledge incorporates, knowledge related to use, practice and procedure of biological and other resources for medical treatment, agricultural practices and various other techniques for survival. This broad set includes information of a functional and of an aesthetic character, that is, processes and products that can be used in agriculture or industry, as well as intangibles of cultural value. Traditional knowledge can be classified under the following heads-

- a) Information known to the society with or without documentation and is in constant use by the people, e.g. common use of Neem and Turmeric
- b) Information is well documented and available to the public for examination and use, e.g. Ayurveda text, information in the palm leaves.
- c) Information that is not documented or commonly known inside small group of people and not revealed outside the groups e.g. Tribal knowledge.
- d) Information known only to individuals and members of families, e.g. cure of asthma by the Gouda family of Hyderabad using specific fish variety as a means for a dispensing anti-asthmatic drug.

### **Traditional knowledge vis-a-vis Indian laws**

The reality with the traditional knowledge is that it cannot be protected in a separate act unlike other Intellectual properties. The possible reason for the same can be that an Intellectual Property right is a right that belongs to a single individual and this right protects his intellectual property whereas talking about Traditional knowledge, it always takes a community as a whole and if a right is provided to them, it would be considered as if the whole community is getting the right, which is not possible, if looked upon at the various definitions of Intellectual Property rights. An Intellectual property right is a right of a human being over his creation of mind. The protection of Traditional Knowledge is one of the considerable matter raised in the World Trade Organization negotiations. The most crucial question arises as to who is actually the owner of a Traditional Knowledge. The term is often associated with a community i.e., indigenous people. But the dispute is whether the concept of Traditional knowledge is conserved in any legal system or not. Many people have taken the initiative to protect their peculiar knowledge. The idea of protecting the traditional knowledge is not limited to the jurisdiction of India but other countries too have been keen to protect their traditional knowledge at a large scale. Parties shall respect, preserve and promote the knowledge innovations and practices of the indigenous people and local communities (ILCs) relevant to biological diversity, with the approval and involvement of the holders of such knowledge and encourage the equitable sharing of benefits arising for its use. Since traditional knowledge is something which is transferred from past generation to the present generation in oral form, so it becomes quite difficult to actually rely over such practices. This is one of the major challenge

that can come as a hindrance while trying to have a legal system for the protection and conservation of traditional knowledge.

As basic concept of Intellectual property rights cannot be in a strait jacket manner applied to Traditional Knowledge. Hence to protect it there is need to device a system which will protect the interest and efforts of the indigenous people and still the whole society will be able to get benefits out of it. It should be realized that traditional knowledge has a large economic value. It can be used for the benefit of the population at large. It becomes essential to protect Traditional Knowledge because of the following reasons-

- a) In order to ameliorate the living conditions of the knowledge holders as their livelihood substantially depends upon the natural resources.
- b) Protecting and conserving Traditional knowledge eases a country's economy.
- c) It can be used as an instrument to mitigate climate change as the whole notion of Traditional Knowledge is that it passes on from one generation to another generation, which is an essence of sustainable development.
- d) Bio piracy is the practice of using traditional knowledge without prior permission by the researchers. For the purpose of protecting Traditional knowledge it becomes principal to exclude the system of bio piracy.
- e) As the fear of extinction prevails with regard to traditional knowledge, so it is crucial to preserve such knowledge before they become extinct. A sui generis system is a must and need of the hour for the same.

In India, there is no specific legislation which takes an initiative to protect the rights of the indigenous communities and their impactful knowledge. But still to some extent measures have been taken by the Indian Government to protect the Traditional knowledge of the indigenous community people.

- a) The Bio Diversity Act, 2002 is one of its kind which was fulfilling the requirement laid down by the World health organization in protecting the natural habitats. The Act explicate the preservation of bio diversity of India. The act lays down a wide range of definitions to explain the terms that can be included under the ambit of bio diversity but still nowhere in the act it has been explained as to what actually a traditional knowledge is. Time and again, there is a failure to a great extent, if at all, the conservation of traditional knowledge is an utmost priority. Also, the act provides an access to a foreign citizen with regard to biological resources and traditional knowledge only on prior approval by the National Bio Diversity Authority. But it is not the case when it comes to an Indian citizen. No such prior approval is required. This is taken as a loophole by the researchers and they tend to exploit the traditional knowledge of the aboriginal community in the name of research.
- b) The PPVFR Act 2001 and the PPVFR Rules 2003, deal primarily with the protection of plant breeder's rights over the new varieties developed by them and the entitlement of farmers to register new varieties and also to save, breed, use, exchange, share or sell the plant varieties, which the latter have developed, improved, and maintained over many generations. The Act is a deviation from the 1991 UPOV Model and can regarded as an

alternative 'sui generis' system that accord protection of the rights of the formal innovations of a plant breeder and informal knowledge system is introduced.

- c) The Patent Act, 1970 also, by the way of its section, stipulates that one cannot duplicate or aggregate the already known properties of a traditionally known component. Such a duplication will not be considered as an invention and one cannot get a patent certificate based on this invention of traditional knowledge.
- d) It is often considered that geographical indications (GI) can be used to protect traditional knowledge and communities. Hence, many countries, including India, have adopted GI laws. GI can only prevent the use of protected marks or indications; it does not protect the knowledge, or the technologies embracing that knowledge as such.

### **Use of Traditional knowledge in medicine making and Health care**

Science and technology often amalgamated with the natural resources creates an enormous and fruitful results. India has a mixed health care system. Indian health care system is defined as a structure that involves three levels. These may be primary, secondary, tertiary. The Indian Public Health Standards (IPHS) states that the delivery of primary healthcare is provided to the rural population through sub-center, primary health center (PHC), and community health center (CHC), while secondary care is delivered through district and sub-district hospitals. On the other hand, tertiary care is extended at regional/central level institutions or super specialty hospitals. The use of traditional knowledge in the development of drugs and medicine can be tremendously useful at the primary level. Traditional knowledge plays an outstanding role in medicine or drug finding. There had been a continuous amount of debate in the past as well as in the present regarding the use of traditional knowledge in the development of the medicines in the modern health care delivery system. Many are of the opinion that traditional knowledge is completely a waste of time, energy and can no longer serve anything useful in the growth or evolution of modern day medicine. This strict contention is because of all the technological advancements that have taken place in the past and is also continuing to take place till date. But keeping such claims aside, it is an undisputable argument that the nexus between the traditional knowledge and drug discovery is genuine and existent. Taking a glance on the process of drug making in the laboratories, there are four stages that are auxiliary to it. Discovery and development, preclinical research, clinical research and review of the drug are the stages of any medicine development. The foremost step is the discovery and development of a new medicine. For this stage, it is essential to thoroughly research every aspect of the medicine. The use of traditional knowledge emphasizes on the use of traditional techniques to extract medicines from the plants or the animals. Some medicines are made in labs by mixing together a number of chemicals. Others, like penicillin, are byproducts of organisms such as fungus. And a few are even biologically engineered by inserting genes into bacteria that make them produce the desired substance. Traditional knowledge as the name suggests, is not only confined to the use of turmeric for medicinal purposes. Rather the scope of the same has been enlarged. Gone are the days, when the concept of traditional knowledge was only associated with the use of turmeric or neem for healing. Now, the development of modern medicines is a collaborative attempt of researcher including chemists, biologists and physicians. Historically, medicines were administered in the form of herbal concoctions, and many traditional medicines

continue to be taken this way. As science advanced, chemists were able to extract the active ingredients from natural sources to make more potent medicines. For example, aspirin (acetylsalicylic acid) was discovered from the willow tree, the bark of which was used in traditional herbal remedies. Drug discovery is a long, laborious process, and only time will tell whether the current strategies will be effective in producing viable remedies. Talking about the health care, during the times of COVID-19, the first precautionary remedy which was been taken in each and every household of India was in the form of '*Kadha*,' which again takes us back to our roots and consumption of natural resources during such the times of hardships.

Traditional medicine does more than provide raw materials for pharmaceuticals— holders of traditional knowledge often have valuable knowledge for new drug development. New drug development is an expensive and risky venture. Traditional knowledge can provide valuable guidance in selecting and obtaining plant material of potential therapeutic interest. Bioactive compounds derived from currently used herbal medicines are more likely to have minimal toxicity, and a long history of clinical use suggests that a herbal medicine may be clinically effective. Plant-derived compounds used as drugs are generally used in ways that correlate directly with their traditional uses as plant medicines.

## Conclusion

Traditional knowledge is important in the development of new medicines. The art of turning a plant into a pill is what traditional knowledge is all about now days. In the developing countries, Traditional knowledge plays a crucial role in establishing food security and looking after the health of the population. As reported in 2002 by the World Health Organization (WHO), In developing countries up to 80% of the population depend upon the traditional knowledge to meet their health care requirements. The World Health Organization (WHO) defines traditional medicine as “the sum total of the knowledge, skills and practices based on the theories, beliefs and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health, as well as in the prevention, diagnosis, improvement or treatment of physical and mental illnesses. Traditional medicine is not only a vital source of health care, but also an important source of income for many communities. Traditional medicine may even form an integral part of a community’s identity. So, at least to economically and financially help such community people there shall be a sui generis system which protects their knowledge at the first instance and also allow them to have economic stability. This can be done when the generation of modern age medicines combines with the old age techniques in order to provide with better results and a better health care system in the country.

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