

Bio-medicinal values of the Mangrove plants - A Short survey conducted at villages near Pichavaram mangrove forest

HarishThummala¹, V. Udhaya², M.R. Suseela², V.Natarajan², P.Laila² and S.V. Meenakshi²

¹Katuri Medical College, Guntur, Andrapradesh, India.

²Department of Microbiology, Annamalai University, Tamil Nadu, India.

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ABSTRACT

The present study was undertaken to obtain some reliable informations about the bio - medicinal values and the use of, especially the traditional medicinal use of the mangroves located at the villages near to Pichavaram sea shore. A short survey was conducted with the villagers. After planning, the study team was constituted, and the villagers were interviewed. The gathered informations were recorded. It was possible for us to share our views with the villagers and obtain the valuable informations about the medicinal use of the mangroves. From our attempt made on the short survey about the biomedicinal values of the mangrove plant species distributed at villages near Pichavaram sea shore, we came to know that the villagers totally depend up on the mangroves for their healthy life run. Pertain to the present study topic, we could able to understand that, these villagers traditionally using the mangrove to treat many of their health problems. Among various mangrove species located in different areas of the Pichavaram mangrove forest, *Rhizophora apiculata*, *R.mucronata*, *Avicennia marina*, *A.officinalis* and *Suaeda maritima* are the mangrove species often used by the villagers to treat their ailments. The Villagers have strong feel and sentiments on these mangroves, which is inseparable from them.

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Introduction

The recent years, the increased percentage interest of the world wide researchers, turned towards the research of microbial drug resistance and related remedies (Bonjar 2004). The increasing use and misuse of the antibiotics result with drug resistance among the bacterial population and it was assessed and unanimously acknowledged by all the members of the scientific world, includes, researchers, scientists, and the medical professionals. The rapid increase of the microbial drug resistance pushing us to the search of new solutions and to develop the new innovative and novel antimicrobials of plant source.

The traditional practice of using numerous medicinal plants to treat or to cure the human diseases is one of major aspects of the human population of many countries for centuries together (Duraipandiyar et al 2006). The World Health Organization recorded as about 80% of the world population rely chiefly on medicinal plants and plant based traditional medicine for their primary healthcare needs (WHO 2002). It is essential for us to screen the biomedicinal and anti microbial activity of the plant parts not only to create the scientific records of such qualities but also to translate these plant products as precious remedies (without any major side effects) for the drug resistant infections. In view of this, it is essential to have and to obtain the reliable informations from the traditional mediciners regarding the use of particular medicinal plants to be used to treat the particular type of diseases or infections.

The traditional wisdom and knowledge in native medicine bringout the cultural heritage and helps in the establishment of certain group of people in selective locality and also help to

create identity in the society. This type of traditional knowledge in herbal medicine passed from generation together within them and has tremendous values among the society. It has been documented the historical importance of the traditional medicine. The oldest record about the traditional medicine had been found at ancient Mesopotamia, which is the modern day middle east and they were sourced back to about 2100 BCE. And it has been recorded that the plants were used in the conventional forms of medicine such as washing and bandaging (India University). The villagers those who are trust in folkloric medicine seek the remedy through the traditional mediciners and ready to follow the advice of these mediciners to overcome from their health hazards and to maintain their wellbeing.

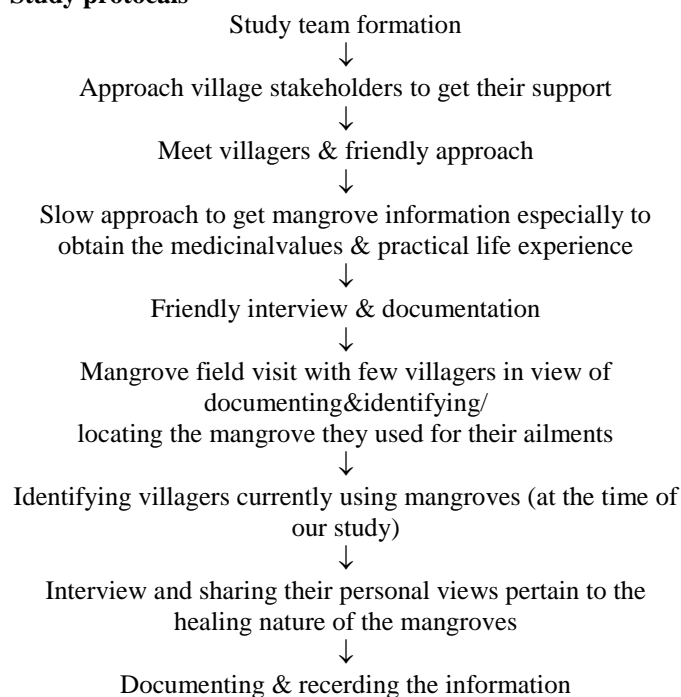
It has been recorded by Mondal et al 2011, 2012, as the traditional mediciners of Sundarban, India still depaied the mangrove plants for the treatment of different ailments, this is due to the villagers' trust in traditional medicine, and the other reason could be due to the lack of modern education, lack in the knowledge of the currently available medical aids and the financial crisis. All over the world, the extracts of the different parts of the mangrove and mangrove associates have been used to treat various types of infections (Abeyasinghe et al 2006). The stem of *Avicennia marina* used to treat ulcers. *Rhizophora apiculata* and *R.mucronata* have been used as alternative medicine to treat various diseases and they are considered to have astringent, antidiarrhoea, antiemetic and haemostatic properties. Larvicidal and antiviral properties of these species are also reported [Kathiresan et al 1998]. Numerous research publications are available regards with the antimicrobial activities of the mangrove plant extracts (Nabeel

et al 2010) and other south Indian medicinal plant extracts (Bandaranayake 1998). The present study is a part of the Phd research work. In this situation it was felt essential to perform the present study in view of including some data on the biomedicinal values of the mangrove plants located at the Pichavaram sea shore, for which, a short survey was conducted with the villagers residing near to the Pichavaram mangrove forest. And the use of these mangrove species by the Villagers has been viewed and the related informations were documented and discussed here in this paper.

Material and methods

Process and Methods of data collection

Study protocols



Study team

In order to obtain the co-operation from the villagers, to move with them easily, also to collect correct informations and for the identification of the mangrove plants at species level the study team had been formed, and the study team collected information from the villagers about forestry resources of the Pichavaram mangrove wetland, the communities and their utilization of the mangroves for their routine and medicinal purpose etc.

Team leader - Dr.Laila Nair, Professor, C.A.S. in marine biology, Annamalai University, India,

Team associate - Dr. V.Udhaya, Professor of Microbiology, Raja Muthiah Medical College, Annamalai University, India,

Data surveyer / Interview conductor - Mr. Hsrish Thummala, Asst. Professor, Katuri Medical College, Guntur, Andrapradesh, India,

Village important persons – selected study area

Village presidents - selected study area

village counsellors - selected study area

ladies / self help group leaders - selected study area

Social workers - Mr.Chandrasekar.N and Mr.Lakshmanan, Visva Arokya Trust, a government registered NGO, Chidambaram.

Mangrove resource villages at Pichavaram Sea shore

The study team had given preference to the following villages to collect informations from the villagers, since these village areas are found to have mangrove forest and near to the Pichavaram sea shore, (which was the place of our study target). The preferred villages includes, 1) Killai, 2.

Pichavaram, 3. Thandavarayan sozhan pettai, and 4. Thillai vidangan. These villages were selected and included in our study.

The role of study team

The team first visited, each village Panchayat and traditional leaders, village important persons, village presidents, and village counsellors, to obtain their co-operation and to easily facilitate the villagers without any inhibitions. The study team leader and the team associate first introduced the study team to these persons and slowly explained about the purpose of the visit and requested their co-operation for our study. Then the social workers Mr.Chandrasekar. N and Mr.Lakshmanan.V, along with the ladies of the self help group, helped us to get informations from the villagers to locate and identify the mangrove users, in their villages.

The interview was conducted with these villagers and the data collector / interview conductor, questioned the villagers about the use of the mangroves in their life. The main focus was given to the mangrove use for their well being and to treat the infectious and non infectious diseases. The informations obtained from the villagers were documented. The interview was repeated (with same questions) for three times at 6 months interval and the informations we recorded from them were rechecked, and cross checked. Pertain to the present study, we had totally depended on the approach of the active community participation.

Result and discussion

Before conducting the survey, and prior to the interview with villagers, a preparatory meet was held with the study team and a checklist was prepared and discussed to get the maximum data informations from the villagers about the mangrove uses. Both men and women were highly co-operated with us and shared their experience regarding the traditional use of certain mangrove species for their health issues. Based on the short survey on the bio medicinal values of the mangrove plants distributed in around Pichavaram sea shore, we came to understand the strong belief of the villagers on the positive aspects of the mangrove plants near to their live hood. In addition to all other uses of the mangroves plants, they also have very strong feel about the medicinal / curing or healing effect / activity / of the mangroves plants for their health ailments.

Many research publications indicating the survey made at Pichavaram & nearby villages about the ethnomedicinal values / uses of the mangrove plants, that all performed by the researchers and or staff from the non medical faculty / specialities such as marine biology, zoology, botany and applied and general microbiology and by others etc. Concern with the medical microbiology, especially from Annamalai University, our study is the pioneer study, performed with the villagers with a proper study team and also with well planned method of survey in order to obtain the maximum out put from the villagers and fruit full informations were gathered.

We came to understand that the villagers in and around Pichavaram sea shore, seems to be dependents of the mangrove plants distributed near to their villages and have constant touch with these mangrove plants. The mangrove plants are used by them at wide range such as cattle graze during paddy growing season, since the whole field covered with paddy crop and not allow the cattle to graze the field, and the cattle are sent to the mangrove forest and fed with mangroves. For their health benefits which includes, to get relief from the health ailments such as, back pain, joint pain,

migrane, urinary tract infections, and also to improve their health, the villagers used to consume certain mangrove plant parts.

From our short survey conducted with villagers around Pichavaram seashore we could able to understand that the people of that area have possitive impact on the use of Pichavaram mangroves to treat their health ailments, especially the socio economically weaker section, poor and marginalized people totally depend up on the mangroves. From our attempt on this study with these villages / villagers, we came to know that these areas are remote and rural areas and far away from the town, not having any health centers near to these areas. So the inavailability of the heath care centers and the villagers hold the feel that it is the time consuming matter for them to reach the town to get the medical care facilities. These are some of the reasons why these villagers are preferring the native mangroves to treat their ailments , rather than the other systems of medicine.

However it has been noticed that the health care centers of both government and private centers are available within 6 km area of distance to these areas. Though these villagers are having good communication facilities such as mobile and telephone, still they are not ready to use these modern technologies for their health care, to communicate either the health care centers or to the NGO vollunteers to provide care for them. And they are not ready to use any other opportunities except depending the herbals and mangroves to treat and solve their primary health problems. Besides the villagers are ready to go and collect these mangroves by travel with their boats, rather not showing much interest to go to near by towns to obtain the modern health care facilities. However , for their severe health problems , they are depending the modern health care systems and bound to use that. From this we can understand their strong belief and sentiments of these villagers to the mangroves and their dependency to cure non seavar health problems.

Tapan Ray 2014 puplished a article on the customary use of mangrove tree as a folk medicine among the Sundarban resource collectrs, in which discussed about the different types of traditional medical practice in mangrove area of Sundarban, such as Herbalist, diagnosis specialist and Healer. In our study we only focused on the traditional use of the mangroves by the selected villagers, family wise or through the traditional medical practioners. And to this point, we were able to obtain good informations from the villagers around Pichavaram seashore. Rather depend a traditional mediciner, they themselves used to collect the mangroves and used to consume for their health problems and for their well being. When we enquired the reasons for their self treatment, we came to know that they acquired the knowledge from their family elders and it go on for generation together it seems. It shows their high confidence on their traditional knowledge about these mangroves.

Tapan Ray 2014, also mentioned about the use of different mangrove species by the people around Sundarban mangrove area, and they accepted socially the traditional practice of these mangroves in their daily life. The traditional wisdom and knowledge in native medicine bringout the cultural heritage and helps in the establishment of certain group of people in selective locality and also help to create identity in the society. This type of traditional knowledge in herbal medicine passed from generation together within them and has tremendous values among the society(Tapan Ray 2014).

At one point our study team, we could experienced the depth of the villagers' sentiments on the mangroves and we have closed our survey and documentation, when the villagers finally said the following to us ; “ Mangroves distributed in our village sea shore is **our natural protector**, who protected us from tsunami, they are **our special treasure** by providing food for fishes, crabs and for cattle, which in turn we were able to get good quality fishes, and crabs. Mangroves are **our mother** by nourishing our cattles by which our cattles seems to be healthier than the cattle belongs to other areas and yeilding good quality tasty milk for our own use and for commercial purpose. **Mangroves are our doctor & our medicine**, by providing its parts to treat and cure our health ailments, and also boosting our health. Above all mangroves are **our Almighty / God for ever and ever ...** there is no words further to say and they smiled at our team Our study team , thanked the villagers with respect and cheer full heart with tear full eyes and said bye to the poor and innocent villagers.

Conclusion

From our short interview conducted with the people residing near Pichavaram seashore, we conclude that the Pichavaram mangrove forest is the paradise of ethnomedicinal mangrove herbes. It is interesting to note that, though they are saying that they are much more depending the mangroves and herbal treatment than the modern medicine, our study team able to bringout the fact that the dependency of these villagers to the modern medicine at times , during severe illness. From our study, we also recorded the use of different mangrove species by the villagers for their healthy life. Among the different mangrove species distributed in the areas of the Pichavaram sea shore , A.marina, A.officinalis, R.apiculata, R.mucronata and S.maritima are the mangrove species found to be familier among the villagers and often used totreat different types of infectious and non infectious diseases and also for their well being .

The present condition of these villagers seems to be in the transition period from the practice of traditional medicine to the modern medicine. It reveals the fact of neither changing the traditional practice of using mangrove as remidy , nor accepting the modern medicine. This brings the attention of anyone who are all interested to sustain the knowledge of herbal medicine. We can suggest and recommend the government policy makers to take right decision over this and provide the necessary steps either to save the traditional medicine practice or to propagate the modern medicine to these villagers.

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