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INVESTIGATION OF CULTURAL PATTERNS AND BELIEFS AMONGST
TRIBAL POPULATIONS IN ORISSA (INDIA) WITH REGARD TO
MALARIA ERADICATION ACTIVITIES

by

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1. INTRODUCTION

In August 1961, the Director of the National Malaria Eradication Programme requested the assistance of the Central Health Education Bureau with respect to a problem of achieving co-operation from tribal populations in Orissa. The effects of DDT residual spraying were being reduced by frequent plastering of houses, people were becoming less co-operative with spraying operations, and it was thought that the tribal people were resistant to the use of drugs. Because the situation was hampering the success of the National Malaria Eradication Programme, the Central Health Education Bureau was asked to make a field survey of prevalent local beliefs and practices affecting the spraying operation, to assess the tribal people's attitudes towards chemoprophylaxis and to make suggestions for health education and other activities that might be undertaken to assure better co-operation.

In response to this request, two senior social scientists of the Central Health Education Bureau travelled to Orissa for consultation with the regional and State malaria eradication officials to plan and conduct the necessary study.

The objectives of the study, formulated in collaboration with the regional and State authorities in charge of the malaria eradication programme were:

- (i) to explore the problem and identify factors responsible for limiting the success of the malaria eradication programme;

- (ii) to suggest appropriate health education and other activities that might be undertaken to assure better co-operation from tribal people; and
- (iii) to indicate the resources required for carrying out these activities.

2. METHODS OF STUDY

Over a period of 18 days, the social scientists visited 18 villages in three units and two districts and talked to members of eight tribal groups in addition to Christians, non-tribals and scheduled classes (Harijans). Four general methods of investigation were used: review of available records and literature relating to the social and cultural background of the tribal people and their health problems; interviews - using a series of semi-structured interview guides - with the personnel of various development departments in order to learn their views and understanding of the magnitude of the problem and the role that their organizations could play in achieving success for the programme; field investigations, including both individual and group interview-discussions, to find out the perceptions, beliefs and practices of tribal people in regard to health problems in general and malaria in particular, and also to identify leadership patterns, channels of communication, and other relevant aspects of tribal social organization; and direct observation of spraying programme operations to obtain first-hand knowledge of the problems and difficulties faced by the spraying team in carrying out their programme.

3. SELECTED FINDINGS

People's awareness of health problems

Although sickness is common, poor health is not regarded as a major problem by these tribal villages. When asked to list local problems, they seldom mentioned health. Instead, priority was given to problems of irrigation, water for drinking purposes, construction of roads, and drainage. The diseases generally mentioned by people include: fever kampoo-jar (fever with shivering; which is probably malaria), dysentery and diarrhoea; headache and cough. Smallpox and skin diseases were mentioned by a few.

Perceptions about causation, prevention and treatment of diseases

Diseases are believed to be caused primarily by spirits of the dead (evil spirits), anger of local deities, and black magic. Climatic and dietary factors are regarded as causative for a few illnesses such as skin disease and fever. There is no knowledge of the role of micro-organisms as agents of disease and no concept of the transmission of disease from person to person or through insects.

Prevention, in its technical sense, is not understood. Deities are propitiated routinely and on special occasions to obtain or retain their favour; some rituals and ceremonies have as one objective the attainment of a general protection against disease and other calamities. Vaccination is accepted, but reluctantly and with little faith that it will prevent smallpox, about which they have their own ideas of causation and prevention.

When illness is believed to be due to supernatural causes, the treatment is mainly by magico-religious rituals frequently involving sacrifice of birds and animals. Illnesses from natural causes are treated with herbal remedies obtained from a vaidya (herbalist). Persons approached for treatment include pujari (priest), dessari (astrologer-cum-practitioner), vaidya (herbalist) and gunia or dhani (magic man or woman). If local sources fail, the same types of practitioners from neighbouring villages are contacted. In some cases, as a last resort, people go to health centres (health centres are visited primarily for injury cases). Christian mission medical facilities and those of tribal welfare agencies (Adamjati Seva Ashram) may be used where available.

Attitude towards allopathic drugs

There is no general antipathy towards allopathic drugs. The villagers have willingly accepted drugs when these were available. Some experience with drugs given by mission workers and welfare agencies have created a favourable impression of their effectiveness.

Perceived consequences, causation and treatment of malaria

Villagers do not differentiate malaria from other types of fever. Fever (including malaria) is regarded as a relatively minor problem. It is viewed as a mild, self-limiting disease (the fever goes down by itself in a few days even though

it may revive after some time) and its primary effect is said to be among children. Malaria (fever) is believed to result from climatic factors. It is thought that when a person working in the field in summer is exposed to rains, his body temperature drops suddenly and this causes fever which comes with chill and shivering.

Neither mosquitos nor sick persons are considered to be carriers of malaria. Mosquito bites, like bed-bug bites, are annoying but are not considered harmful to health. Generally, no treatment - not even magico-religious treatment - is taken for fever, probably because it is considered to be a self-limiting disease.

Customs and rituals that influence people's acceptance of DDT spraying

House plastering is associated with deeply-held religious, ceremonial and aesthetic traditions. It is regarded as necessary on the following occasions: during festivals, which occur four to six times a year, all houses are plastered; when someone dies or recovers from smallpox or chickenpox all houses are plastered; following childbirth and a death and just before a marriage, adjoining houses and those of close relatives are plastered; following menstruation, the floor (but not the walls) of the house is plastered - during this period, the woman stays outside the family living rooms, either in a verandah or in a spare room; and whenever a housewife finds time and considers it desirable the house is plastered. Fresh plaster is regarded as decorative as well as an aesthetic practice.

Broadly speaking, every house is plastered at least eight to ten times a year. Plastering of floors is undertaken more frequently than plastering of walls; it may be undertaken as often as once a week.

People are aware of a decline in malaria incidence, but they do not associate it with the use of DDT. Spraying of houses with DDT is not liked; rather people were found to hold negative views about it. Fear of prosecution is a major reason for the acceptance of DDT spraying. People remember instances of prosecution for refusal of vaccination and feel that they may be similarly prosecuted if they do not agree to DDT spraying.

Reasons for people's dislike of DDT spraying include: spraying increases the bed-bug nuisance. Nearly everyone believes that DDT contributes to an increase of bed-bugs. It is said that the nuisance is reduced for two or three days after the spraying, but that later the bugs come in greater numbers; the spraying gives a bad smell to the unventilated rooms in which people sleep; spraying disfigures the wall (walls are beautifully plastered by colourful clay); preparing for the spraying causes inconvenience and waste of time in shifting household goods; the DDT now sprayed is considered to be of poorer quality and less effective than that used earlier. The emulsion type, supplied in 1949 and 1950, used to kill all types of insects, it is said, while that used at present is effective against none.

Since the people are not aware of its benefits, spraying is considered useless. It is not linked with malaria eradication; rather it is expected to do away with mosquitos and other insect nuisances, which it fails to do. Moreover, there are more congenial ways, for instance using smoke, to reduce the mosquito nuisance. Because of festivals and other ritual reasons, plastering of walls cannot always be held up for two months after spraying.

Forecast on trends in people's attitude

Fear of prosecution, which has motivated people to accept DDT spraying, is beginning to decrease. This suggests the possibility of an increase in refusal rate. This viewpoint is derived from the following observations: the belief that DDT increases bed-bug nuisance; the fact that protests against spraying are stronger in road-side and non-tribal villages; fear of prosecution for refusing DDT is stronger in interior and tribal villages; and refusals are more common in road-side villages where the people are beginning to know that they cannot be prosecuted for refusing DDT spraying. This awareness is spreading from road-side to interior.

Chemoprophylactic measures - people's reactions

Local people would probably accept and use salt mixed with drugs if offered to them. The extent to which this measure could be successful in promoting National Malaria Eradication Programme objectives cannot, however, be predicted as yet. People in all study areas expressed willingness to store drugs with their own leaders and to take them during illness. Their confidence in drugs is likely to increase because of the demonstrative results that antimalarial drugs are capable of producing.

Social organizations and leadership

The well-knit village social structure and influential leadership is a positive and promising factor for winning co-operation of the people. Unlike non-tribal villages, factional rivalries are by and large absent in these tribal areas; also leadership in tribal villages rests with only a few (three to four) traditionally-appointed persons who usually do not stand in conflict with one another.

Traditional leaders are also the functional leaders and it is easy to identify them. Persons who command influence include: naiko (traditionally-determined village head); pujari (priest); dessari (astrologer-cum-practitioner); and gram panchayat members (if not covered by the functionaries already mentioned). Besides the above-mentioned, the challan (traditionally-appointed village messenger) and vaidya (herbalist) also carry influence. All these influential people have positive and constructive roles to play in developmental and other welfare work. The gunia or panguniani also called dhani (black magic man or woman) are important in the sense that they are feared and also their help is occasionally sought.

Naikos not only carry influence, but have been a liaison between government and the people. In many cases they are the only tribal people in a village who know the Oriya language; they take pride in being better informed about the outside world and appear comparatively more receptive to new ideas. With the exception of the gunia and dhani all the influentials can be usefully involved in the malaria eradication programme. Gram panchayats have recently been constituted in these areas and the members are mostly composed of village naikos. Usually about 10 villages are covered by a gram panchayat. Villages are small in size and scattered; communication is, therefore, difficult.

Co-ordination with other departments and welfare agencies

There is considerable scope for involving other departments, particularly the personnel of the block development office, primary health centre, range sanitary inspectors, tribal welfare department, schools, etc. and also certain welfare agencies like Adamjati Sevak Sangh and Christian missions. At present, not much help has been sought from any of these organizations. Personnel of these agencies, with the exception of the primary health centre staff, have more or less the same

beliefs and misconceptions about the cause of malaria and the purposes of DDT spraying, as the tribal people. Personnel of other departments are generally not aware of the difficulties encountered by the malaria unit.

The local malaria staff as yet is neither fully aware of, nor enthusiastic about, the role of panchayats or other development departments in making the antimalaria programme a success. Village level workers who reside in the villages (usually the panchayat headquarters village) can be helpful, as indicated by the block development officers, in the following ways: preparing the villagers in advance for DDT spraying; undertaking follow-up activities such as persuading the people not to plaster their houses after spraying; making arrangements for stocking DDT; helping malaria inspectors in supervising spraying work; stocking and distributing drugs; and reporting fever cases and reactions to drugs, if any, to the authorities concerned.

The primary health centre staff and the range inspectors, as well as the workers of Adamjati Sevak Sangh and Christian missions, can be utilized in more or less the same way. The Adamjati Seva Asharam workers maintain close contacts with tribal people; they have picked up local languages and carry influence with local people, even though the people are not interested in school education for which these workers contact them. School-teachers of the area will be of limited use. They are not local people and do not know the local language and their job satisfaction is low.

One of the difficulties mentioned by the spraying team is that the entire team of about 40 persons has to move together because of: difficulties in storing DDT; physical facilities and accommodation for lodging and cooking; and supervision.

Movement of the entire team together is not economical as it does not take much time to spray a village. Difficulties mentioned above can be substantially overcome if co-operation is achieved from other departments.

Health education measures

Hardly any efforts have been made to involve panchayats and other departments and welfare agencies in the programme. Education activities have been limited to efforts made during the time of spraying in a village to explain its benefits to the people. Pressure and coercion has been used as a measure to achieve acceptance for spraying.

Though the people generally recognize that there has been decline in malaria incidence, they do not associate it with DDT spraying. No organized effort has yet been made to capitalize on this observed benefit for building up a favourable response for DDT and the spraying team. The malaria inspector and staff have about six months in a year free from spraying work, which they can utilize for educational activities.

4. IMPLICATION OF THE FINDINGS AND SUGGESTIONS OF REMEDIAL MEASURES

The study indicates that there is considerable scope for educating people and their representatives about malaria and malaria eradication measures. There are many areas of ignorance and misunderstandings which the villagers, both tribal and non-tribal, have about the disease and the programme. Likewise, the staff of the National Malaria Eradication Programme, who are knowledgeable about technical details, need to be apprised about the people's beliefs and perceptions about malaria and about the measures adopted for its eradication. For ideal co-operation, people and staff should have some common understanding and view the problem more or less in the same way. Better mutual understanding will be helpful in overcoming many of the difficulties faced at present.

The study also reveals readily available resources and channels of communication that can be used for educational purposes. For instance, there is considerable scope for orienting the personnel of other development departments and welfare agencies and enlisting their support. Since plastering is associated with a number of deeply-held religious and ceremonial traditions, and also because there is positive response for drugs, it may be easier to popularize chemo-prophylactic measures as compared to DDT spraying, the latter being linked with many negative factors. Perhaps a combination of both chemo-prophylactic and spraying programmes with the former preceding the latter, would be helpful in making the programme a success.

Suggestions for health education opportunities in the malaria eradication programme can be broadly grouped under the following heads:

Who is to be taught? (people and people's organizations; workers of other development departments such as personnel of community development block, primary health centre, schools, etc. and the workers at various levels of the National Malaria Eradication Programme).

What is to be taught? (subject matter for health education and orientation programmes); How is it to be taught? (methods and procedures for conducting health education and orientation activities); who will teach? and what teaching aids will be required for it?

Before discussing the details under each head, it may be desirable to indicate broadly, for emphasis in health education, the areas of ignorance of village people and the workers; misunderstandings of the people about the programme; limiting factors; supporting factors; and channels of communication.

Information about which the people need to be informed includes:

Malaria is communicable. It may, however, be noted that, because the people are totally ignorant about the communicability of disease, it may be difficult to educate them about it. Perhaps it may be sufficient for achieving co-operation in the programme if the people know simply that a "mosquito bite causes malaria". Malaria is carried by a particular type of mosquito from a sick to a healthy person. Again it may be sufficient to know that malaria is carried by a particular type of mosquito rather than to know the details that it is carried from a sick to a healthy person.

DDT is meant to kill a particular type of mosquito which carries malaria and is not intended to do away with mosquito and insect nuisance. Drugs cure the malaria patients who are then no longer a source of danger to others. The decline in the incidence of malaria is due to the efforts of the DDT spraying teams.

The workers of the National Malaria Eradication Programme need to know about: patterns of social organization and techniques of community mobilization, for instance, identifying the influential people like naiko (village headman), pujari (priest), dessari (astrologer-cum-practitioner), etc. and involving them in the programme; possibilities and means of involving the personnel of other development departments in the malaria eradication programme; and the desirability of correctly explaining what DDT can achieve and what it cannot, lest people's expectations are raised too high.

The workers, development departments and welfare agencies need to know: the nature of the work of the National Malaria Eradication Programme. For example, they should know how NMEP operates, what its purposes are and that DDT is intended to kill only one type of mosquito which carries malaria; the difficulties faced by the NMEP field staff in achieving people's co-operation. For example, they should know that people plaster the houses soon after these are sprayed and this reduces the effectiveness of DDT; and the ways they can be helpful (their role) to the NMEP in making the programme a success.

Misunderstandings of the people include: DDT is supposed to do away with mosquito and insect nuisance; DDT spraying is associated with an increase in the prevalence of bed-bugs; DDT used at present is of low quality and is, therefore, not effective against mosquitos (the fact that many mosquitos and insects gradually develop resistance to DDT is not known); malaria is caused by being exposed to heat and cold; and refusals for DDT spraying will result in prosecution.

Limiting factors - people - include: house-plastering is associated with deeply held religious, ceremonial and aesthetic traditions and the pattern will be difficult to change; malaria is considered to be a relatively minor problem and disease; and the fear of prosecution for refusing DDT spraying is declining.

Limiting factors - workers: the workers usually do not know the language of tribal people; the villages are scattered and small in size and communication is, therefore, difficult; the exceedingly high rate of illiteracy (almost all the tribal people are illiterate) makes the educational process difficult; ignorance of the people and workers of other agencies about the Programme and the malaria eradication measures; and many tribal people do not have the tradition of learning from outsiders.

Limiting factors - organizational and other - include: DDT gives a bad smell; it disfigures the walls, which are usually kept beautifully plastered by the tribal people; for many obvious administrative reasons, the spraying schedule of the spraying team is kept rigid and tight, and is not geared for villagers' convenience; often when the spraying team reaches the village, many houses are found locked as

the timings of the visit clash with the working hours of the agriculturists; because of many difficulties, no advance notice is given to the villagers or to the local workers about the spraying schedule; because of communication difficulties and lack of storage and residential facilities, the entire spraying team has to move together; the villages being small and scattered, the movement of the entire team (about forty persons) together is not economical as little time is needed to spray a village; it is often not possible to employ local or tribal people as spraymen for they are reluctant to stay away from their villages for a number of days; and the temporary nature of spraymen's employment makes for many limitations in regard to their interest as well as ability to undertake educational work.

Channels that can be utilized for popularizing malaria eradication measures include: local leadership such as naiko (village headman), pujari (priest), dessari (astrologer-cum-practitioner), vaidya (herbalist) and challan (traditionally-appointed village messenger); panchayats and other people's organizations, such as tribal welfare agencies and Christian missions; and workers of other development departments, such as personnel of community development block, primary health centre, range inspectors, tribal welfare departments and schools.

5. RECOMMENDATIONS

From the findings of the study, the following recommendations can be considered for implementation. Naturally, the details of each of the educational activities will have to be worked out by the State Malaria Eradication Organization and the State Health Education Bureau. If necessary, they may obtain technical assistance from the Director, National Malaria Eradication Programme and the Central Health Education Bureau.

The State Malaria Eradication Organization, with the assistance of the Regional Director, National Malaria Eradication Programme, should organize and conduct a series of State, district and unit level seminars with the object of disseminating relevant information about the eradication programme to all the personnel of the public health, community development and other agencies (panchayats, education departments, tribal welfare departments,

state welfare boards and other voluntary organizations). Apart from the dissemination of information, the seminars should also aim at establishing effective channels of communication between these agencies and the malaria eradication units and enlist the co-operation of the workers concerned, not only in developing a certain amount of co-ordination between these agencies with regard to locating and allocating resources, but also in helping to determine the responsibilities of different kinds of workers in the field.

The State Malaria Eradication Organization should plan, develop and implement a malaria eradication education programme in close collaboration with all the sections of the State Health Directorate. This will assure active co-operation with the eradication programme. For the effective discharge of these responsibilities, it is necessary to have a full-time fully trained health educator in the State Malaria Organization and a similar health educator at the zonal levels of the State. These health educators, with the technical guidance of the Central Health Education Bureau, should undertake to carry on malaria eradication education primarily through malaria eradication units and primary health centre staff, and secondly through the panchayats, community development personnel and voluntary agencies. They will also procure, develop and supply the educational material required for conducting this work.

In each national malaria eradication programme unit, the unit officer should, with the assistance and the technical guidance of the State and zonal health educators, plan and conduct orientation programmes for local development workers, village panchayat and community leaders. Considerable emphasis should be given to developing inter-department and inter-agency collaboration in order to ensure that specific educational responsibilities assigned to each worker are carried out adequately from village level and upwards. This means that every worker will have educational activity as a necessary component of his day-to-day work.

Though every malaria eradication worker and the general health personnel have to carry educational responsibilities, it is necessary to designate one of the members of the malaria unit for undertaking a major share of this responsibility. The assistant unit officer or a sanitary inspector who has had a good field experience and who possesses the right aptitude for working with people should be trained in health education for a period of about three months. He should be made to devote a major part of his working time (at least 50%) to organizing educational work and to supporting and guiding other members of the unit on behalf of the unit officer to discharge their educational responsibilities.

To achieve maximum co-operation of the people for successful implementation of the National Malaria Eradication Programme, the educational effort should be directed in the following order.

1. (a) All workers employed in National Malaria Eradication Programme;
(b) personnel of the primary health centre; and
(c) community development and social welfare departments.
2. Panchayat members, village leaders and voluntary workers.
3. Village people.

The training of workers of the National Malaria Eradication Programme and other departments may be done through (a) pre-service; (b) in-service; and (c) orientation programmes. The programme should make these workers more competent in:

- (1) identifying village leaders and involving them positively in the eradication programme;
- (2) understanding villagers' attitudes and practices and identifying and neutralizing elements that may hinder the operation of the programme;
- (3) explaining their programme to villagers in matters that are understandable and acceptable;
- (4) winning co-operation of villagers for the programme.

The training, with emphasis on points indicated above, can be organized at the following levels:

Central Institute for Communicable Diseases, Delhi (former Malaria Institute of India)	Training of state health educators and Assistant Director of Public Health (Malaria) and more emphasis on health education during pre-service training.
Regional or State level	In-service training of unit malaria officers.
Unit Level	In-service training for assistant unit officers, senior malaria inspectors and malaria inspectors in charge of sub-units and sub-centres.
Sub-Unit level	In-service training for superior field workers and spraymen.
Block level	Orientation training for the appropriate personnel of the following organizations: Block Development Office Primary Health Centre <u>Panchayat Department</u> voluntary organizations

Education of the village leaders:

In view of communication difficulties and the magnitude of the problem of influencing villagers' behaviour by direct educational efforts, it is suggested that education efforts at village level should be directed primarily towards influential members of the community-members of the gram panchayat, panchayat samitis and other local leaders, including members of voluntary organizations. Training camps at village level, consisting of about ten villages should be organized for these influence-carriers, and they should, therefore, be supported and guided in their efforts to persuade their fellow villagers to participate in the eradication programme. Much of the

responsibility for carrying on and supervising educational efforts may have to be gradually shifted over to the panchayat organizations.

To provide incentive and enlist active co-operation, some funds may be given either to the gram panchayats or to village leaders (in the form of allowance) for conducting educational activities and carrying out other responsibilities in relation to the Malaria Eradication Programme.

Education of the people by mass communication methods:

Though mass communication methods would be of limited use in educating the tribal population, these can be utilized for educating and convincing non-tribal and mixed populations residing in small towns and roadside villages. It is from these areas that resistance is spreading to the interior and tribal populations. For this purpose, programmes relating to malaria eradication activities may be broadcast in the rural and tribal programmes of the All-India Radio. Publicity to eradication measures may be given in the local press, and arrangements for cinema shows, display of posters and distribution of literature should be made. Publicity facilities at the community development blocks and Publicity Departments should be utilized for it.

School-teachers can be helpful in popularizing malaria eradication measures amongst students. They should arrange talks, demonstrations, projects on malaria, and some lessons relating to malaria and its eradication measures should be included in the school text books. It may, however, be stated that in tribal areas the school-teachers, because of their language difficulties and other problems, can only play a limited role in this programme.

The spraying programme may have to be reorganized to provide flexibility in spraying-schedule to suit local requirements. This may perhaps be achieved by (a) reducing the area covered by a spraying team; (b) reducing the size of the team to about half and increasing their number; and (c) increasing the frequency of spraying from two to about four times a year.

Systematic effort should be made to pool together and feed back into the educational programme the knowledge and experience already acquired by field workers and officers in their work with villagers. All educational efforts should be scrutinized and assessed in terms of their effects on the central problem towards which they are directed - improving the effectiveness of the National Malaria Eradication Programme in these tribal areas.

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