

Intervention on malaria awareness among 'Bedia' tribal community in West Bengal, India

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ABSTRACT

Background: Tribals have a vulnerable health status because of malarial morbidities, yet they ignore their illnesses and do not go to physicians during sickness for several reasons including poverty. **Objective:** This qualitative research project attempted to create awareness among 'Bedia' tribal to initiate preventive and other personal protective measures against malaria. **Methods:** Initially, efforts were made to create malaria awareness by literate 'Bedia' volunteers who were trained to do so; however, their tribal fellows were reluctant to receive awareness efforts from them. After thorough analysis and interaction, a novel "interprofessional team" of composer, vocalist, and instrumentalists approach was made to impart malaria awareness by composing songs in the language of the aborigine. Then health education was imparted to the 'Bedia' participants by the trained 'Bedia' through theme songs with their rustic music instruments and group dance performances in the intermingled media from the team. An evaluation was done to assess usefulness of the health education intervention by the researchers. **Results:** Overall, 137 adult 'Bedias' in 42 families (M = 74; F = 63) participated in our study. In the informal feedback session, only 51 adult males and 46 adult females could furnish expected results. Out of the 42 families residing in the village, 11 houses consistently used mosquito bed nets before the awareness program; after the awareness program, it became 15 as was demonstrated by using social mapping. **Conclusions:** Our project activities on the Bedia tribes could unearth required interventions of awareness about malaria. However, it was possible to create awareness and confidence among them so that they could themselves take necessary preventive measures and positive approaches toward malaria.

Keywords: Awareness, Bedia tribe, interprofessional study, Malaria

Introduction

The 'Bedia' tribal folks constitute a tribal population present in different parts of India including Bihar, Jharkhand, and West Bengal. They are economically compromised, backward in literacy, and culturally confined.

The members of the tribal 'Bedia' community have been reported also regarding their vulnerable health status.^[1] They generally ignore their diseases and do not go to physicians even when they are sick.^[2] Therefore, they need awareness of diseases

and the ways to combat them particularly the preventable and curable diseases like malaria precisely. The need for this awareness of health problem among this tribal community can not be overemphasized, as, if this is made effective, the health status of this community will immediately and definitely be lifted up.^[2,3]

Malaria remained a global health problem even after many path-breaking technological revolutions. After 73 years of independence, malaria is progressing in devastating forms in India and the tribal community accounts for 50% of malaria-related deaths in India.^[4-10]

The research group of this study felt that the clinical discourses on updated knowledge on malaria are enormously relevant to the practice of "First contact physician" of primary care in the

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vast tribal belts in India. Further, knowledge about scientific truth and social reality must have discovered pertaining to these developing continents and a qualitative research needs to be instituted particularly in our country.^[11] So, this qualitative research project was undertaken to impart health awareness among the Bedia tribal community of eastern India to make them aware about malaria and its prevention to begin with.

Methods

This qualitative research was conducted among the 'Bedia' tribe at the village "Mahatopara," near Tungidighi under Karandighi block, the predominantly tribal populated neighborhood in the largely rural district Uttar Dinajpur, situated in the northern part of West Bengal in eastern India bordering Bangladesh. The study was carried out during 12 months from May 1, 2016 to April 30, 2017.

In the initial phase, the principal investigator made an appeal of voluntary participation among the literate individuals of this 'Bedia' community to expedite better inroads to an attempt to switch their conceptual and contextual learning toward malaria. Ten literate community persons could have been selected to recruit them as team members for the process of "Training of trainers" of this project toward positive direction. To begin with, these volunteers were primed by lecture and demonstration about basics of malaria and practical aspects of prevention applicable for their tribal belts with their existing compromised logistics.

The pretest questionnaire was administered to the volunteers before the lecture and demonstration on cognitive, affective, and psychomotor aspect of malaria and its prevention suited for their academic level. The questionnaire was internalized by the research group with the help of faculty and experts on malaria at the institute with piloting among comparable population. However, in the post-test only 8 volunteers could have answered correctly all the questions from the same questionnaire. In the next phase, the awareness programme was initiated by these 8 volunteers with their best efforts among their brotherhood of Bedia tribal folks. But it was surprisingly noted that their tribal fellows were reluctant to receive awareness efforts from the volunteers. Further, these volunteers also assessed by their reflection and concluded that their sincere efforts to impart learning on "malaria" to their neighbors could not be materialized.

Then with the abovementioned Bedia volunteers, we could have organized repeated "Focus Group Discussion (FGD)" to take a revised roadmap to further the study. In between these FGDs, continued informal intracommunity thread-bear discussions enlightened the community members across age and gender regarding their perception of teaching-learning in informal adult education that will fill their need. It was our awakening to refresh use of nonconventional approach of teaching-learning for this Bedia population rich in informal educational approach and rich aborigine cultural heritage.

We could explore that Bedia tribal people adore music, dance, and fun n frolic in all their religious, ritual, and traditional festivals. Incidentally, during this period upon their candid request to our research group members, we could have gain access to their cultural heritage, the "Karam" festival. We became familiar with their cultural paradigm and discussed at length among ourselves involving the proactive tribal members about revival of the awareness programme on malaria in lateral thinking. In addition, we coupled our health check-up camps volunteered by formally educated group of physicians several times during study period. Thus, over the days of sincere interactions, we were able to gain trust and confidence among the members of this marginalized community.

In this restoration phase of the study, an awareness programme was visualized by forming an "Interprofessional (IP) team" consisting of lyricists, musicians, instrumentalists, choreographers, and vocalists among the community members along with concerned persons outside the community. A song was composed in the comprehensible language of this aborigine on malaria awareness. Thereafter, with the fusion of melody, rhythm and pattern of folk-dance this song was metamorphosed to touch the heart of this tribal community with the active participation of the proactive community volunteers. Following this, the IP team members helped facilitation of teaching-learning of the content and form of the song to the volunteer group of singers and dancers of the Bedia community with their participatory contribution. Thereafter, the song and dance ended in mass performance for Bedia community people with explanation of the content by a demonstration of the interprofessional research team (IPRT) members and volunteer performing artists of the tribal community [Figure 1].

In this reactivation phase, this song boosted up the moral of the IP team members that precisely focused on malaria awareness along with choreography and was repeatedly performed among different batches of Bedia people at their domestic courtyard arena. With their sincere feedback and repeated revision of



Figure 1: Malaria awareness song played by the Bedia volunteers and "interprofessional research team" members to the Bedia tribal people

content and form of this song was made to suit presentable to the community. Later on, this song and dance was presented in a special programme at the center of the village with a preparatory phase of campaign to ensure maximum participation of the community members. Concurrently, Bedia team also performed an additional show of synthesis of conventional and contemporary music on malaria awareness that supplemented the goals of the IP team members [Figure 2].

The Bedia folks enjoyed a series of sessions by their active participatory contribution, which was sincerely repeated several times over a period of 6 months of postmonsoon mosquito breeding season. The research group repeated the sessions with the aspiration to reach the last person of the community as majority were the daily wage earners and could not be covered in any single session; further the information was reinforced for those persons who were attending the awareness sessions several times.

To assess the internalization of the imparted knowledge on the disease malaria of the participants and its prevention, a postintervention evaluation was suggested by one of the Bedia folks of the “Interprofessional team.” However, initially pretest and post-test could not be planned as backwardness in literacy among adults in the community was a perceived hindrance of the research group. So, conventional post-test could not be accomplished through their upgradation of knowledge on malaria was assessed on informal postsession reflection and verbal exchanges across age and gender of members of the folk that is continuing even after study period is over.

The principal investigator was the treating physician of tribal community folks, and additionally, sensitized proactive members of the community to assess usefulness of mosquito bed nets during the study. So, “social mapping” with locally available indigenous modus operandi was visualized by the folk participants by marking those houses who were consistently and correctly using good quality mosquito bed nets before this study was initiated. Also, analogous social mapping was done to find any change of perception and practice of prevention of malaria after awareness sessions were over, on the basis of consistent and correct use of good quality mosquito bed nets to compare behavior change before and after all these innovative efforts [Figures 3 and 4].

This study was approved by the Institute Ethics Committee (IEC) of the MGM Medical College and LSK Hospital, Kishanganj, Bihar, India (Date of approval: 26/7/2016). This study was undertaken as self-funded project within the range of the fellowship activities supervised by the Foundation for the Advancement of International Medical Education and Research Regional Institute at Manipal Academy of Higher Education (MAHE), Manipal, India and under mentoring of the faculty members of Manipal University FAIMER International Institute for Leadership in Interprofessional Education (MUFILPE).



Figure 2: Bedia singers and dancers performing the malaria awareness song among the other Bedia tribal people under facilitation of the “interprofessional research team” members



Figure 3: Bedia people drawing social mapping: about use of mosquito nets before awareness program showing only 11 houses (indicated by flowers) out of total 42 houses (indicated as squares) using mosquito nets



Figure 4: Social mapping: about use of mosquito nets after awareness program showing 15 houses (indicated by flowers) out of total 42 houses (indicated as squares) using mosquito nets. The white-colored flowers indicated the increased number of houses using mosquito nets after awareness programme

Results

The census population of the study area of the “Bedia” tribe-populated village “Mahatopara” totaling 209 was included in our study population. Of them 137 are adults, rest are children; of the 137 adults, 74 were males and 63 females [Table 1].

Among the literate Bedia tribal folk volunteers of initial part of the study, 10 were selected and were administered with a pretest. After this pretest, they were facilitation with a teaching–learning session by imparting awareness hands-on training that was prepared earlier. After the training was over, they were given a post-test in which only 8 succeeded [Table 2].

In our qualitative research study, the malaria awareness group song was played by the Bedia volunteers and “Interprofessional research team” members. This was followed by a separate performance of song and dance by the Bedia tribal people themselves performing the malaria awareness song among the other Bedia tribal people under facilitation of the “Interprofessional research team” members.

Then in the informal feedback session, out of total 74 adult male Bedia folks, 58 provided reflection among 66 participated of which only 51 could furnish expected results; among 63 adult females in total, 59 participated in sessions of which 51 provided feedback and only 46 gave expected results [Table 3].

Out of the 42 families, residing in the village, 11 houses used mosquito nets before the awareness program and after the awareness programme, it became 15 [Figures 3-5].

Discussion

In the initial phase of the study on malaria awareness, attempts were made to improve the perception of Bedia tribal folk through

Table 1: Demography of Bedia tribal village

Adult male (number)	Adult female (number)	Male child (number)	Female child (number)	Total number
74	63	39	33	209

Table 2: Results of malaria training programme among the volunteers

No. of volunteers appeared in pretest	No. of Bedia volunteers trained	No. of volunteers succeeded in post-test
10	10	8

Table 3: Outcomes of malaria awareness programme

Results	Session participation	Feedback participation	Correct knowledge	Total Bedia
Adult male	66	58	51	74
Adult female	59	51	46	63
Total				137

their fellow educated volunteer group. This sober effort could not find substantial positive contextual changes in internalization by the Bedia tribal folk probably because of thought-block of learning from nonprofessional neighbor. In the restoration phase, the “Interprofessional team” members have indigenously composed malaria awareness performing arts. This effort was graciously accepted by the volunteers among tribal people with their innovative participatory contribution. Then indigenous team of performing arts contributed for the malaria awareness song to suit it for the other Bedia tribal people under facilitation of the “IP team” members. These tribal singers and dancers also composed another song by their own efforts to supplement the main theme. Though conventional pre–post test could not be accomplished because of dearth of formal education; their upliftment of insight on malaria was noted on informal postsession reflection.

Reflections of the research group

The malaria disease burden is increasing in many countries despite the existence of effective preventative strategies and antimalarial drugs. An understanding of community perspectives and practices is one of the essential components of successful malaria control.^[12]

What happened?

There was an initial failure with the perception of using path of conventional health education approach of awareness training of Bedia literate tribal folks initially and then cascading the malaria awareness through these volunteers. There was repetitive discussion about the “how it could have been better” to find out “what went wrong” in this initial phase. The novel idea thereafter was generated from among the volunteers after “Focus Group Discussion.” We moved toward the novel idea to successfully impart awareness through malaria-related performing arts within the participatory contribution of the Bedia tribal folk members to change their attitude to prevent the disease in letter and spirit.

So what?

One basic concept was learned by the research group that common place methods used for so called formally educated

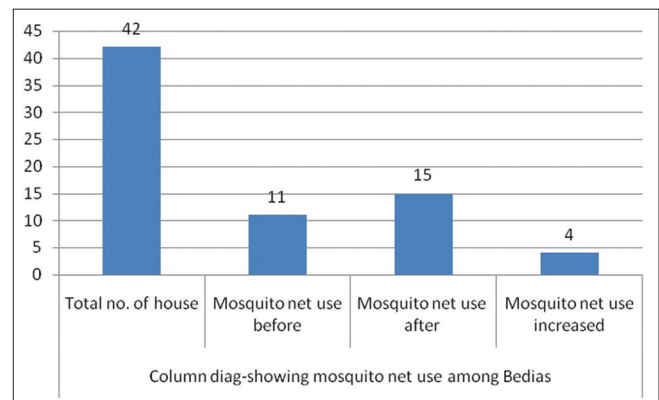


Figure 5: Depicting mosquito net use among Bedia families

population would not hold good for educationally backward tribals. More lateral thinking and greater intense efforts are needed to be innovative in approaches toward sensitization on “Neglected tropical diseases” including malaria.

What next?

Progressively in-depth and intense efforts for prolonged period with trials and errors, a good and positive change could be brought about even in this darkest section of the society. Thus, the research group members were accepted by the community members at large felt our efforts and ultimately imbibed us as one of them.

Implications of the study

Our efforts with failure and success have enlightened us as to the seriousness, intensity, and variety with which interprofessional endeavors should be made to create noticeable sustainable changes in the downtrodden and vulnerable segments of the society. There was a reversal of learning that is we also learned from them. A final message is we cannot close the deal unless we become one of them.

Self-impact

The very impact of our project on us was one of greatest learning towards sustainable research paradigm. We had learned to implement a project successfully with participatory contribution from people from different profession by forming IPRT. It is also learned that any project execution any big activity in life for that matter is bound to meet with challenge. The biggest learning was to face each challenge on a one to one basis and to overcome each hurdle to reach the oasis of gratification.

On IP team impact

The impact of the project on the IP team members has two facets viz. individual views and view of IP teams. Everyone in the IP team realized that solidarity, co-operation, social responsibility regarding risk perception on the basis of love and concern for the society are the key issues in life of the researchers. Thus, the empathetic approach becomes a profound glue to keep the researchers united with the participants. From their point of view of IP team members, it is the great feeling that enthusiasm begets enthusiasm.

On the community impact

The impact of a project on a self and team is basically byproduct but the real targeted products are the ones on the society. We succeeded, though with much difficulty to make some tribal people aware that malaria is a serious disease, but it can be treated and prevented in a scientific way. We helped them to convince for personal protection by consistently using mosquito bed nets. Further, they could have been sensitized to start in a perpetual manner to reduce the breeding sites of vectors of malaria as a self-help approach.

Global literature supported the magnitude of assessment of awareness programme on malaria that used conventional pre–post cognitive educational approaches.^[13-24] However, recent study from Ghana reported role of empowering the teachers for primordial prevention among school students for good understanding of malaria and its vectors.^[25] Our observations that the key activity of enhancing knowledge of the downtrodden tribal people and empowering their community should be the mainstay to overpower the menace of malaria were supported in recent literatures also.^[26,27]

Strengths of the Study

The positive outcomes of the project are:

1. We got closely acquainted with a group of aborigine who are socially, economically, and educationally backward compared with mainstream people
2. We learned and got experienced regarding how to create an interprofessional team, and proceed step by step in close conference so as to get a desired outcome in an earmarked plan of activities
3. Bedia tribal also got some good gestures from some educated mainstream people, which not only enlightened them, but also gave them plausibly, strong “feel-good” inputs
4. In knowledge and practice, there were definite enhancements with behavioral changes.

Limitations of the Study

We faced difficulty to penetrate close community culture of the Bedia tribal, as also initially the language barrier. We could have succeeded to impart awareness on malaria to part of the total adult Bedia population even with our vigorous efforts who had comparatively higher literacy, whereas the rest of the folk of the community remained unaffected. Further, lack of time to spare more dedicated time for this tribal awareness drive, economic affluence due self-funded project, proactive team members, village leaders, and stakeholders.

Future Directions of the Study

Our project was on the basis of creative songs and choreography to augment malaria awareness of the Bedia tribal in Tungidighi village. Future vision of the project is to start holistic activities like cleaning the environment to reduce mosquito breeding places by not allowing water to stagnate for more than a week anywhere in uncovered forms. Further, we wish to help them aware on the consistent use of mosquito bed nets to reduce incidences of other mosquito borne diseases like dengue, filaria, Japanese encephalitis, etc. We wish to move stepwise manner to make impact [Table 4].

Conclusions

We conceptualized problem of malaria among Bedia tribal folk and their lack of awareness. However, it was possible to create awareness and confidence among them by innovative

Table 4: Stepwise approach of future direction of study

Step 1	Continue group discussion with tribal people in the surrounding villages also
Step 2	Continue periodic mass interaction programmes with cultural gathering and festivals
Step 3	Mobilize the stakeholders like Panchayat members, Block development officers, local doctors, school teachers to boost and actively take part in the programmes
Step 4	Motivate the school students with the help of their teachers and guardians to creatively and regularly perform programmes on the environmental consciousness issues and other disease-preventing activities
Step 5	To meet district-level and state-level stakeholders to act on sustainable changes

approaches of performing arts in their acceptable content and forms with positive approaches toward malaria prevention with the enhancement of number of mosquito net users.

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Conflicts of interest

There are no conflicts of interest.

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