



The Social-economic Impact of NTDs Affected Tribal Areas in Amarkantak Region

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Abstract

Neglected Tropical Diseases (NTDs) are a category of infectious diseases affect people who are residing in high endemic conditions in rural and disadvantaged urban areas of underdeveloped and poor economic countries. The socio-economic analysis of the NTD affected areas is required for policy making, hence the Pushparajgarh Tehsil of Anuppur district has been selected, which is one of the most inhabited areas in Madhya Pradesh having NTDs. In this investigation, the data collected from primary source (direct interview with questionnaire using random sampling method) and secondary sources (Government reports, literatures and statistics). Totally 25 villages and urban wards were selected purposely and the sample size of 250 households were randomly obtained from Pushparajgarh Tehsil. The socio economic impact of NTDs of the scheduled tribes including Gond, Panika, Jogi, Kol, Baiga and Agariya tribes, who are indigenous and geographically isolated were analyzed. The results showed that majority of the household occupations are agriculture and more than 75.2% of the respondents are formers and have income around below Rs. 4000 to 8000 level. Even daily wage labourers are present in the sample population. In education, 32% of the respondents didn't have any formal education and around 17.6% of the respondents studied upto secondary class. This study concluded that there is a need to provide adequate facilities to the tribes with respect to education, socio-economic development, health care, etc, which can motivate them for awareness of NTDs and other health related issues, which can improve their socio-economic status.

Keywords: Neglected tropical diseases; socio-economic impact; Tribes; Madhya Pradesh; health care

Introduction

Neglected Tropical Diseases (NTDs) are largely affect poor population in the low and middle income countries and causes different physical effects such as disability, impaired childhood growth, maternal morbidity, etc. to the affected population. The fifth BRICS summit held in 2013, discussed and committed to eradicate poverty and promote sustainable, inclusive and balanced growth by eradicating NTDs [1-4].

Socio-economic Position (SEP) influences the probabilities of NTDs, which lead to poverty and uneducated children. Socio-economic inequalities aroused due to several NTDs such as onchocerciasis, soil transmitted helminths, human African Trypanosomiasis, Lymphatic Filariasis, and Chagas in many countries. Notwithstanding these inequalities, the prevalence of some NTDs remains high in some endemic areas. Socio-economic analysis using models and socio-economic data collected through census would more accurately reflect socio-economic conditions in the countries determine its inequality [5-11].

The tribal belt in Madhya Pradesh and Chhattisgarh consists of tribal peoples with poor socio-economic backgrounds. The tribes are ear-marked as a community of people who live in forests and hills and are considered the primitive segment of Indian society [12]. The unawareness of sanitation, health, and hygiene, affects their routine and social well-being. In this present investigation, we have analysed the information on the socio-economic impact of NTDs on the tribal populations in Tehsil Pushparajgarh (Amarkantak) in the district of Annupur (Fig. 1).

The study area

The data have been collected from Pushparajgarh Tehsil, Amarkantak region in Annupur district (Fig. 1). The study has been designed on the basis of survey options, considering the socio-economic conditions and the impact of socio-economic on NTDs in tribal people. The evaluation was performed as per the methodology and objective given below.

Importance of the study

The tribes do not have awareness on NTDs, because of their illiteracy, unavailability of proper medical facility, ignorance, etc. They believe to cure diseases through own traditional means, hence many people have affected by diseases, such as Trachoma, Parasite, Scabies, Soil transmitted helminths, Lymphatic Filariasis, chronic diseases, etc. The public transport available in this place are almost nothing and the private transport services available as a source of transport and they do not cover the entire region are costly and limited. Hence, the people had to have their own vehicle to travel anytime. As the Amarkantak region is located very far from the district headquarter, the distance to Government hospitals are more than 30 to 50 km. However, the geographical conditions (climb up and down the hillocks) of the area, the traveling time is higher, hence the accessibility of health care facility seems to be hard for ill patients.

Methods

The collected data were duly coded and organized. The frequency tables and cross tables were performed using statistical software SPSS, subsequently the data were converted into percentage. Totally 25 villages & urban wards were selected purposely, which are located at remote and inaccessible places in the Amarkantak region. The total population of the universe of the study is not known. Hence, a non-probability sampling method was adopted for this study. In each village or ward, 10 households were studied using accidental sampling in which the easily accessible respondents to the researcher were selected at the time of data collection. The sampling size of the study was 250 respondents. In this study, the data were collected through direct interview method

(primary source) and the secondary source. A self-structured interview schedule was prepared by having the necessary interaction with the field experts and researchers for collecting the data.

Results and Discussions:

Madhya Pradesh is one of the states in India that has many tribal populations majorly residing in Eastern Madhya Pradesh (Anuppur, Shadhol, Mandela, Dindori, etc) [12]. The protection of people, especially tribes in India, from the NTDs and providing a healthy environment is an ultimate goal of the Government and the society. Most of the villages of study areas are encircled by a natural and constructed pond, which will be the source for mosquitos breeding. Further, communication facility and the type of houses are completely affected at the time of the rainy season.

In this area the inhabitants are almost all illiterate, working mainly in the agriculture field. The indigenous tribes spend most of their time outside the dwellings and sleep on the floor of the verandas. Medical facilities are poorly existent and mostly non-functional. In this region, few diseases such as Trachoma, Parasite, Scabies and Soil transmitted helminths, Lymphatic Filariasis (LF) etc have been documented. The studies revealed that almost 24% population is affected by scabies, 20% by common cough and cold and 13% affected by soil transmitted helminths. Filariasis, viral, bacterial and other parasitic infections also affected to this population. Therefore in this study, the socio-economic impact of NTDs in the Amarkantak region in Pushprajgarh tehsil, one of the tribal population-dense belts has been considered.

Gender distribution:

Pushprajgarh tehsil comprised 173,123 tribal populations with 86,195 males and 86,928 females (As per Census 2011 of Anuppur) [12]. Table 1 shows that nearly two-third of the respondents (64.8%) were men and one-third of the respondents (35.2%) were women. To conclude that the majority of the respondents were male available at the time of interview.

Distribution of tribes:

The Table 2 reveals that 75.2% of the respondents belong to the Gond tribe, Panika (20.8%), Jogi (1.6%), Kol (1.2%), Baiga (0.8%) and 0.4% belong to Agariya. Anuppur district has 358,543 tribes (As per Census 2011 of Anuppur) [12]. It confirms that Pushprajgarh tehsil predominantly has a tribal population as compared to other tehsil of Anuppur. As per the Anuppur district data, the Gond tribes are predominant and the same is reflected here.

Education qualification:

Illiteracy is a major problem of these tribes as 32% of them are illiterate, 22% of the respondents studied up to 8th class and around 17.6% of the respondents studied up to 10th class. The level of 12th class and higher education completed respondents are limited. It revealed that among the total sample of the studied population, around two-third were educated (Table 3). This shows that nearly half of the inhabitants of these areas belong to tribal population and do not have any formal education and the parents do not consider, education is the primary requirement for their children. The tribes feel education is luxury for them and they do not have sufficient economy, hence the minor children are also engaged for agricultural works. Further, number of

reasons for illiterate and drop out from school including lack of accessibility to school, poor health, financial problems, lack of interest in studies, and ignorance of the parents.

Occupational Status

Occupational pattern in the study area is not concerned with their traditional way of getting livelihood from forest. Agriculture is the main source of livelihood of the tribals. More than half of the households depended on agriculture and 25% of them depended on agriculture labour. Agriculture is the major source of income of this study area. Some people have own agricultural field in small size, so they struggle hard to manage their family. They produce paddy, wheat, corn and rarely green gram. As Table 4 shows 75.2% of the respondents were farmers and they were doing agriculture as their primary occupations and around 15% of the respondents were manual labourers. Most of the tribal people have no agricultural field, so they work on other's agricultural fields as a labourer to sustain their livelihood. As rural and tribal areas in India an agrarian society and hence the majority of the respondents involved in agriculture and its related activities. Here, as the government has given lands to the tribes, the tribal population has lands for cultivation.

During the field work it was observed that the majority of the member's in respondents' families have discontinued their traditional occupation. Most of them are working as daily wage earners in the agricultural field, and construction sites.

Income of the respondent:

The above table 5 clearly shows that, 47.6% of the respondents weekly income range from below Rs. 1001 to Rs. 2000 and 38% of the respondents weekly income is Rs. 1000. Majority of the tribes in the study area live below the poverty line of Rs. 8000 per capita per month.

Place of resident:

As Table 6 shows, the vast majority of the respondents (93%) were living in the rural areas and 6.4% of the respondents were residing in urban areas.

Ownership of the respondent

As per the Table 7, it is interesting to know that entire sample population (100%) were staying at their own house and it is because they resided in the rural places. The rural population can afford to have their own house and mostly it is their forefather's assets.

Type of houses:

Tribals in Madhya Pradesh live in small houses made of mud walls covered on top with baked tiles (Khaprail). The tribals using handmade brick and wooden roof structure covered on top with home baked tiles. As Table 8 shows, the type of houses owned by the respondents which helps us to know their standard of living and economic status. Out of 250 respondents most of them 242 (96.8%) were residing in tiled houses, only 8 (3.2%) respondents lived in concrete houses. In many cases, the tiled houses are not completely built. Due to poor earning capacity, it is difficult for them to build completely tiled houses. The traditional houses of this study

region is made of mud walls and roof made of tiles (Khaprail) (Fig. 2). Most of the houses had a single large room which was divided half way by a mud wall.

Distance to the Health Centre

The health care facility is poor in the villages and the primary health centres are located away from the resident. The higher medical facility (advanced check-ups and immunization for children) are very poor in the villages and they have to travel long distance through hillocks. As Table 9 shows Two-fifth of the respondents (42.4%) responded that the distance of the nearest health care facility from their villages is 0 to 2 KM and about one-third of the respondents (37.2%) told that the distance of the nearest health care facility from their villages is 2 to 5 KM. Significantly, the rest of the respondents (one-fifth) had to travel 5 to 10 KM to the nearest health care facility and in these circumstances the rural population which lives such remote places had to depend on their village level local private doctors and sometimes fake doctors too.

Suggestion

This study provides some suggestions for strengthening the socio-economic condition of the tribes in Pushparajgarh Tehsil.

- Special facilities related to medical facility, infrastructure facilities should be developed for proper healthcare.
- Improvements on the functioning conditions of primary health centres.
- Government's policies on projects and programmes on health awareness, literacy program, etc should reach the tribal population without delay.
- In addition, the Government should focus the basic requirements to improve the socio-economic status by providing financial and non-financial support to the tribal people in the study area.

Conclusion:

The study concluded that the tribal people residing in this area are earning low salary (income), improper sanitation, etc which does not fulfil the basic requirements, leading to poverty, in ability to educate children, unable to avail proper medical facility, social exclusion, discrimination etc. The tribes affected by the NTDs can not earn sufficient income for the family, because of health issue and to travel long way for medical facility. In such cases, the family members including children have to earn income through agricultural work or related works. The social backwardness of these tribes is also reflected in their literacy performance and educational attainment. They have not even kept pace with the spread of literacy among the scheduled tribe population of the state as a whole. The bottom-up approach is needed and Government must take keen initiative for the upliftment of Gond, Panika, Jogi, Kol, Baiga and Agariya tribes in Pusparajgarh Teshil for increase the socio-economic impact of the tribal populations.

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Conflict of Interest

The author does not have any conflict of interest on this manuscript.

References

- Allotey P, Reidpath DD, Pokhrel S. Social sciences research in neglected tropical diseases 1: the ongoing neglect in the neglected tropical diseases. *Health Res Policy Syst* 2010;8:32. doi: 10.1186/1478-4505-8-32.
- Hotez PJ. The Disease Next Door. *Foreign Policy*. 2013; March 25.
- Stolk W, Kulik M, le Rutte E, Jacobson J, Richardus J, de Vlas S, et al. Between-country inequalities in the neglected tropical disease burden in 1990 and 2010, with projections for 2020. *PLoS Negl Trop Dis*. 2016. doi: 10.1371/journal.pntd.0004560.
- Woode ME, Khan JAM, Thomson R, Niessen LW. COUNTDOWN Consortium. Equity and efficiency in the scaled-up implementation of integrated neglected tropical disease control: the health economics protocol of the COUNTDOWN multicountry observational study in Ghana, Cameroon and Liberia. *BMJ Open*. 2018;**8(6)**: e020113. doi: 10.1136/bmjopen-2017-020113.
- Bethony J, Brooker S, Albonico M, Geiger SM, Loukas A, Diemert D, Hotez PJ. Soiltransmittedhelminth infections: ascariasis, trichuriasis, and hookworm. *Lancet*. 2006;**367(9521)**:1521–1532. doi: 10.1016/ S0140-6736(06)68653-4.
- Cashwell A, Tantri A, Schmidt A, Simon G, Mistry N. BRICS in the response to neglected tropical diseases. *Bull World Health Organ* 2014;**92(6)**:461-462. doi: 10.2471/BLT.13.132555.
- de Glanville, WA, Thomas LF, Cook EAJ, Bronsvort BM, de C, Wamae NC, Kariuki S, Fèvre EM. Household socio-economic position and individual infectious disease risk in rural Kenya. *Sci. Reports*. 2019;**9**: 2972 (1-9).
- Hotez PJ. The Disease Next Door. *Foreign Policy*. 2013; March 25.
- Houweling TA, Karim-Kos HE, Kulik MC, Stolk WA, Haagsma JA, Lenk EJ, Richardus JH, de Vlas SJ. Socioeconomic inequalities in neglected tropical diseases: A systematic review. *PLoS Negl Trop Dis* 2016;**10(5)**: e0004546. doi: 10.1371/journal.pntd.0004546.
- <http://databank.worldbank.org/data> [accessed on 21 June 2021]
- Lenk EJ, Redekop WK, Luyendijk M, Rijnsburger AJ, Severens JL. Productivity loss related to neglected tropical diseases eligible for preventive chemotherapy: A systematic literature review. *PLoS Negl Trop Dis* 2016;**10(2)**: e0004397. doi: 10.1371/journal.pntd.0004397.
- Census of India 2011 Madhya Pradesh. https://censusindia.gov.in/2011census/dchb/DCHB_A/23/2344_PART_A_DCHB_ANUPPUR.pdf

Table 1: Gender-wise Distribution of the Respondents

Gender	Number of Respondents	Percentage
Male	162	64.8
Female	88	35.2
Total	250	100

Table 2: Distribution of the Respondents according to Name of the Tribe

Gender	Number of Respondents	Percentage
Gond	188	75.2
Panika	52	20.8
Jogi	4	1.6
Kol	3	1.2
Baiga	2	0.8
Agariya	1	0.4
Total	250	100

Table 3: Educational Qualification of the Respondents

Educational Qualification	Number of Respondents	Percentage
Illiterate	80	32.0
Up to 5 th class	39	15.6
Up to 8 th class	55	22.0
Up to 10 th class	44	17.6
Up to 10+2	23	9.2
Under graduate	7	2.8
Post graduate & above	2	0.8
Total	250	100

Table 4: Occupational Status of the Respondents

Occupation	Number of Respondents	Percentage
Manual Laborer	37	14.8
Farmer	188	75.2
Government Employee	12	4.8
House Wife	3	1.2
Others	10	4.0
TOTAL	250	100

Table 5: Distribution of the Respondents as per Income Group

Occupation	Number of Respondents	Percentage
No Income	7	2.8
Up to Rs 1000	95	38.0
Rs 1001 to 2000	119	47.6
Rs 2001 to 3000	13	5.2
Rs 3001 and above	16	6.4
Total	250	100

Table 6: Place of Residence

Occupation	Number of Respondents	Percentage
Urban	16	6.4
Semi Urban	2	0.8
Rural	232	92.8
Total	250	100

Table 7: Status of Ownership of House of the Respondents

Ownership of House	Number of Respondents	Percentage
Own House	250	100.0
Total	250	100

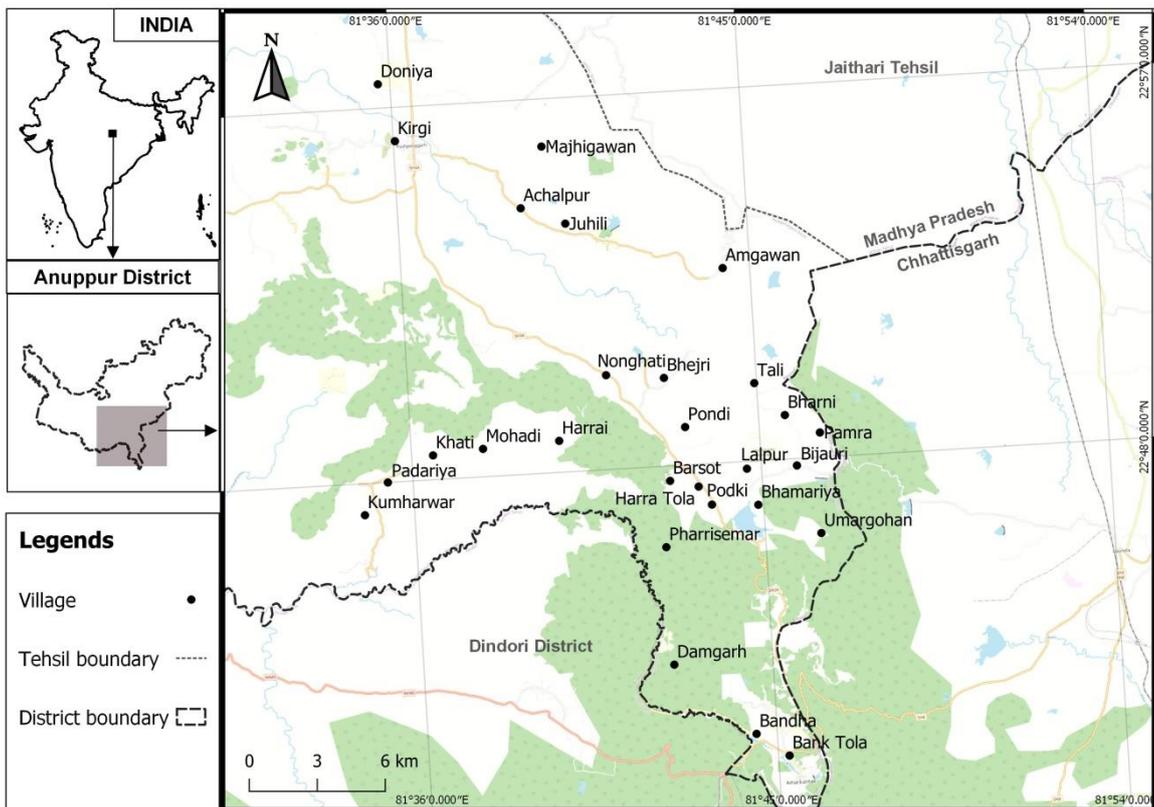
Table 8: Type of House Residing by the Respondents

Housing Type	Number of Respondents	Percentage
Tiled House	242	96.8
Concrete House	8	3.2
Total	250	100

Table 9: Distance of Nearest Health Care Facility from the Villages of Respondents

Distance	Number of Respondents	Percentage
0 to 2 KM	106	42.4
2 to 5 KM	93	37.2
5 to 8 KM	44	17.6
8 to 10 KM	57	2.8
Total	250	100

Figure 1: Selected Villages Surveyed in Pushparajgarh Tehsil



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Figure 2: Tiled houses in Tribal Areas

