

# Morbidity Status And Trends In Attendance Of Newly Established Out Patient Clinic In Tribal Taluka Central India

**Dr Lata Ajay Tapnikar**

Associate Professor, Department of Community Medicine,  
NKPSIMS & RC, Nagpur, Maharashtra, India

**Dr Amol R Deshmukh**

Secretary VSPM, NKPSIMS & RC, Nagpur,  
Maharashtra, India

## **Abstract:**

**Background:** Tribals are the most marginalized set of people in the country and there is little or scattered information on the actual burden and pattern of illnesses they suffer from. This study provides information on pattern of diseases among tribals residing in the Pench National Reserve. This is a pioneering study on the population of this area

**Objectives:** To study the morbidity status and trends in attendance of a new outpatient clinic established in tribal taluka of central India.

**Materials and Methods:** Study design: Descriptive Cross sectional study. Duration: One year from September 2014-August 2015.

**Results:** The records of 2352 patients, good quality socio demographic as well as provisional clinical diagnostic data were available. 1576(67%) were female and 776(33%) were males. 2168(92.1%) were Hindus of whom 75.1% were from the Gond tribal community. Only 56.8% were employed 43.2% were unemployed. 714(30.36%) suffered from musculoskeletal disorders, 427(18.16%) suffered diseases of respiratory system, 353(14.99%) were having diseases of cardiovascular system. 288(12.24%) had dermatological conditions but only 12(0.76%) had diabetes mellitus type II, 197 (8.37%) suffered from infectious diseases.

**Conclusions:** The study found prevalence of different diseases commonly found in a tribal/rural population. Non-infectious diseases are more common than infectious diseases. General debility, Arthritis and Hypertension form a bulk of morbid conditions. Scabies and fungal infections were found to be a common skin disease. Trends showed preponderance of female, distances of less than 15 kms and market days for attending the health facility. Low cost of services provided was also a reason for even unemployed availing services. Availability of money, seasonal changes and mobility in deep forested areas affected the outpatient clinic attendance.

**Keywords:** tribal population, trends, primary health care, morbidities.

## I. INTRODUCTION

In light of the onset of 21<sup>st</sup> century, the inadequate health infrastructure for the tribal population just 80 kms away from the forthcoming smart city is still inexplicably appalling. In most parts of remote tribal areas due to inaccessibility and inapproachability there is a lack of medical facilities that cater to this marginalized population. Tribals are the most marginalized social category in the country and there is little and scattered information on the actual burden and pattern of illnesses they suffer from. (Jain et al., 2015) This study

provides information on burden and pattern of diseases among tribals. We in our prior visits to the Pench National Tiger Reserve realized that for a 10 km radius around the newly established Outpatient clinic, there were no allopathic practitioners who visited or practiced in this remote area. The need to serve the predominantly tribal people was the main purpose of opening the Outpatient clinic. Also to date there has been no comprehensive study that has evaluated the spectrum of morbid conditions prevailing in these parts of central Indian tribal community residing in the thickly forested area. Lack of primary health care services is the main reason

for the physical, mental and social health problems and major obstacle in the overall development of the tribal people. The present study is an attempt to study the health problems and trends in clinic attendance in the population residing in the tribal taluka of central India. Primary healthcare delivery has been the back bone of Health care system in India. If primary care is provided for the population in tribal/rural settings, it would come a long way in managing preventable diseases, timely referral to tertiary care and improving the quality of life. This record based cross sectional study from the year 2014-2015 aimed to examine a current primary health care acceptance of the newly established outpatient clinic in The Pench National Reserve forest in central India. By documentation of clinical and preventive measures used to combat predominant health problems in the area, we sought to emphasize the general impact or lack of primary health care still prevalent for the simplest of commonly occurring morbid conditions for which the tribals have to seek health care from Non allopathic practitioners with devastating consequences on the disease as well as their economic affordability. The outpatient clinic currently functions as the nodal point for the primary healthcare delivery model, the end-points of the analysis revolved primarily around examining the out patients clinics provision of health services with respect to the changing trend in the health status of the target population. Hence, the paths that could be the objects of potential optimization would include provision of adequate community and clinical interventions, coupled with active disease surveillance and primary healthcare provided at the village level. We hope that the results of our study would serve as a platform for the creation and augmentation of potential and existing tribal health systems that could gradually be extended throughout India to address the concerns surrounding tribals through promoting and executing primary healthcare.



Tribal Market in the area of work

## II. AIMS AND OBJECTIVES

- ✓ To assess the morbidity profile among the population in tribal area
- ✓ To study some socio demographic parameters among the population in tribal area
- ✓ To study the trends of clinic attendance in the population of the tribal
- ✓ To suggest recommendations based on the study

## III. MATERIALS AND METHODS

**Research setting:** This study was conducted in a newly established outpatient clinic in a Tribal taluka of Nagpur district. With HERD Foundation a nongovernmental organization working in the Pench National Tiger Reserve since 2014 and has a coverage of 20 villages .Total population according to the definition at the field practice area of OPD Pauni is 15967.Study Design: Descriptive Cross sectional study.

**Inclusion criteria:** Records of all the patients who registered for the first time were included in the study.  
**Exclusion criteria:** patients coming for repeat treatment and registered for repeat consultations within the same episode of illness were excluded from the study.

**Sample Size:** 2352 by universal sampling method taken over a period of one year from Sept 2014-Aug 2015.

**Ethical Approval:** Data were made available by request at HERD Foundation registers which included entries of patient care given by visiting clinicians in the outpatient clinic. This project was a program evaluation as well as research, as determined by the NKPSIMS Institutional Review Board. Permissions to utilize data for this evaluation were obtained from the Institutional ethical committee. Patient visit data, without individual identifiers, were examined for one year from the record of the outpatient clinic registers provisionally



Pench Forest Reserve, area of work

diagnosed by attending clinicians between Sept 2014 and August, 2015.

Statistical Analysis: Data was analyzed in MS excel and Epi-info software version 7.1.1.14

IV. RESULTS AND DISCUSSION

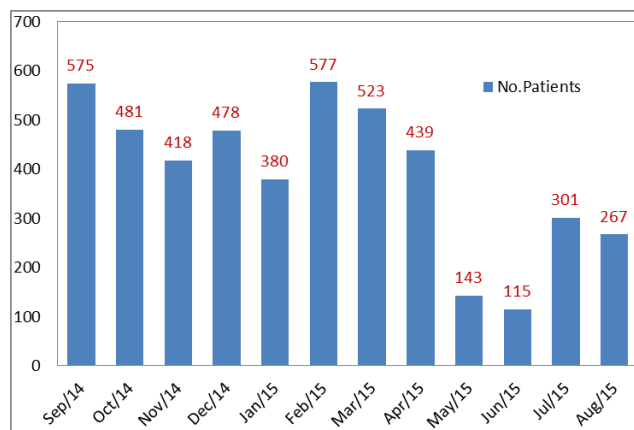


Figure 1: Month wise patient attendance

In the one year study period it was seen that a marginal dip was seen during the winter season, which is also called the healthy season in these parts of the country, the second dip in health seeking is during the months of May and June, this is because of extreme hot weather with temperatures soaring to 48 deg centigrade, the tribals prefer to stay in their dwellings.

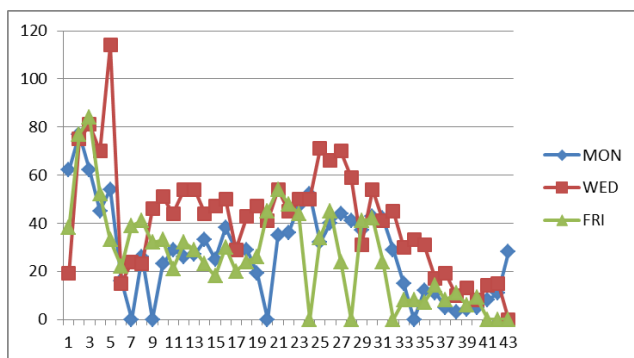


Figure 2: Week days attendance pattern

In the three day week schedule of the newly established out patient clinic, most attendance was during the mid week, that is Wednesday, this is because of the labour off for contract labour and also market day, which happens once in a week in this remote region, the tribals come equipped with money for provisions for the week ahead as well as visiting for their health concerns. One of the major issues in health status measurement is the health seeking behaviour of a community, which governs their morbidity and mortality pattern. Tribal population groups of Bastar District, Madhya Pradesh, provide a dismal picture as far as health status is concerned in terms of health seeking behaviour. The poor health seeking behaviour among the tribal group of Bastar (Muria, Madia, Halba and Bhattra) is the result of social and living conditions, malnutrition, illiteracy, ignorance, etc., and of the poor medical and health opportunities. (Basu, 1993).

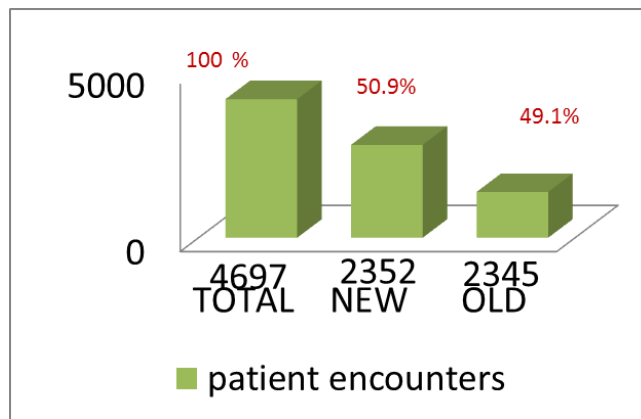


Figure 3: Repeat attendance of patients

The success of a clinic depends on the repeat health seeking behaviour of the patients. Total of 4697 patient encounters 2352 were new patients who attended the clinic for the first time, 2345 of the patients were of second or third repeat encounters. It was an encouraging experience to know that 50 % of the new patients visited due to mouth publicity and the other 50% came back for treatment due to patient satisfaction.

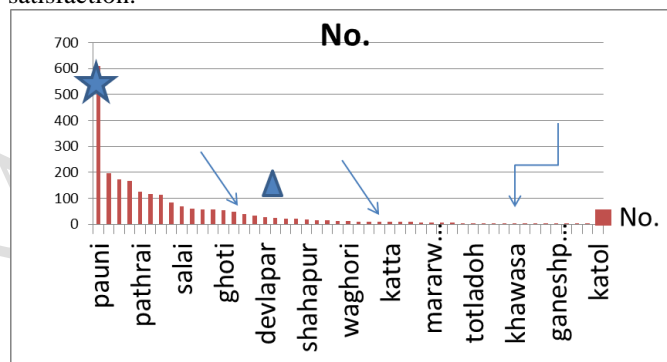


Figure 4: Drainage areas of the Outpatient clinic

The trends observed were very obvious as seen in fig 4 where in farther the patients location from the clinic, less frequent was the drainage from these areas. Beyond a radius of 15 km it was difficult for the tribal population to access the newly established clinic for lack of logistic support like motorable roads or frequent transportation, in these remote region. When health status is poor, distance plays a less significant role in an adult's provider choice decision (J. Borah, 2006)

s.no	Range	Female	Male	Total
1	0-10	203 (53%) (13%)	180 (47%) (23%)	383 (100%) (16%)
2	11-20	176(61%) (11%)	113 (39%) (14.6%)	289(100%) (12.2%)
3	21-30	298(76%) (19%)	94(24%) (12%)	392(100%) (16.7%)
4	31-40	299 (74%) (19%)	104 (26%) (13.4%)	403(100%) (17.1%)
5	41-50	221(66%) (14%)	113(34%) (14.6%)	334 (100%) (14.2%)
6	51-60	206(75%) (13%)	69 (25%) (9%)	275 (100%) (11.6%)
7	>60	173 (63%) (11%)	103 (37%) (13.4%)	276(100%) (11.8%)
	Total	1576(67%) (100%)	776 (33%) (100%)	2352(100%) (100%)

Table 1: Age wise distribution of subjects



There seems to be a fairly equal distribution of patients of all ranges of age groups. The youngest to attend the clinic was 8 days old and the oldest was 91 years of age. 67% of patients were female as compared to only 33% were males.

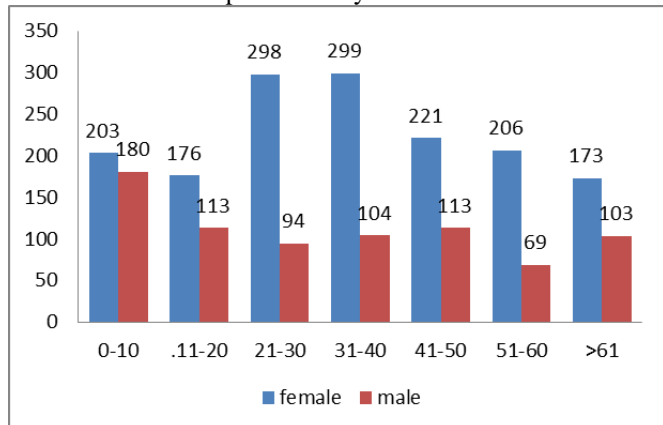


Figure 5: Bar chart showing age and sex wise distribution

It was observed that the attendance of female patients was more as compared to male patients which was nearly half. As the male patients begin to drop from early adolescents to mid 60's. This has been attributed to the almost all female staff which included the clinic incharge, 2 assistants, the nursing staff as well as the social worker and the local attendant. Except for one social worker who is a male who was posted on Wednesdays. Lesser the age lesser the gender related inhibitions in health seeking behaviour.

Sr.No	Religion	No. of Subjects	Percentage
1	Hindu	2168	92.1
2	Buddhist	154	6.5
3	Muslim	25	1.2
4	Sikh	5	0.2
	Total	2352	100

Table 2: Distribution according to Religion and Caste

The newly established outpatient clinic was situated in a tribal taluka in central India. Majority of the subjects were Hindus of whom 75.2% were Gonds or scheduled tribes. Madhyapradesh adjacent to our study (Sharma et al., 2012) is one of the largest states of India inhabited by the bulk of tribal populations of the country constituting 20.3% of the total tribal populations. There are 46 Scheduled Tribes (ST) ("Census of India."), among which Gond, Bhil, Baiga, Sahariya, Oraon, Korku and Kol are the most prominent. Scheduled Tribes are communities in India which are given a special status by the Constitution of India for their development and welfare [2]. The tribal groups of MP are mainly hunter gatherers, labours and farmers and belong to IE, DRA and AA families, which are widely spread language families in India [1]. Rest were Brahmin, OBCs, banyas etc. 92.1% of study population was Hindus followed by 6.5% Buddhist, 1.2% Muslims and 0.2% Sikhs. No Christians were recorded in this study

Occupational status	category	No.	Percent
Unemployed	Geriatric	90	3.9
	Housewives	240	10.2
	Students	392	16.7

	Children		
Employed	Unskilled	1228	52.2
	Skilled	110	4.6
Total		2352	100

Table 3: Distribution of subjects according to occupation

43.2% study subjects were unemployed and where as 56.8% are employed, The reason for both

unemployed vs unemployed equally accessing the facility was due to low cost health care provided. (J. Borah, 2006) found that the demand for healthcare in rural areas is negatively affected by the price of healthcare and distance to a healthcare facility. They concluded that poorer households were more price-sensitive, with higher elasticity of demand in seeking care for children than for adults. (Raza, Van de Poel, Panda, Dror, & Bedi, 2016)

Systems affected	Female N=1576		Male N=776		Total N=2352	
	No.	percent	No.	percent	No.	percent
Reproductive system	81	5.12	6	0.77	87	3.7
Urinary System	17	1.08	18	2.31	35	1.48
Gastrointestinal sys	94	4.68	90	11.57	184	7.23
Cardiovascular sys	296	18.77	77	9.91	353	14.99
Diabetes mellitus	10	0.63	8	1.03	18	0.76
Respiratory sys	259	15.72	168	21.66	427	18.16
Infectious ds	111	7.04	86	11.08	197	8.37
Dermatological ds	156	9.88	132	17.01	288	12.24
Musculoskeletal sys	522	33.12	192	24.73	714	30.36
Ophthalmic ds	18	1.14	15	1.93	33	1.40
Endocrinal system	12	0.76	4	0.52	16	0.68

Table 4: Distribution according to primary morbid conditions

Our study had 18 (0.76%) diabetes mellitus. Most of the case were either known cases of diabetes already under treatment or some detected in the due course of Random blood sugar test in the outpatient clinic setting. Adult diabetes is a health problem which requires constant monitoring and regular medication which would be very difficult in these socio-economically deprived populations with very limited health care facilities. More studies on this population with major focus on cardiovascular and metabolic disorder are required for making preventive strategies (Tyagi, Saluja, Chaturvedi, & Kapoor, 2010).

Infectious diseases seemed considerably on the decline along with gastro intestinal disorders which were 8.37% and 7.23% respectively. The prevalence of intestinal parasites among children (6-14 years) was found to be 17.8%. Studies carried out in various parts of India have reported a prevalence of intestinal parasites from 30 to 50 % among school going children (Dongre, Deshmukh, Boratne, Thaware, & Garg, 2008).

## V. CONCLUSION

The study found prevalence of different diseases commonly found in a rural population non-infectious disease

are more common than infectious diseases. This socio-economically deprived population represents co-occurrence of high blood sugar level, high blood pressure and high fat percentage pointing towards beginning of metabolic syndrome which is very distinct and recent phenomenon among primitive tribal group. (Tyagi et al., 2010) General debility, Arthritis and Hypertension also form a bulk of morbid conditions. In the spectrum of skin diseases scabies was found to be the most common disease. The study by (Hassan et al., 2014) emphasizes the need for providing frequent dermatology services to the community at the primary healthcare level so that the burden of dermatoses, especially infectious, may be reduced. Also, wider studies should be conducted in different regions in order to assess the actual magnitude of dermatological illnesses in the community. Female attendance to the clinic was comparatively more. The Unemployed Vs Employed were nearly equal this could be due to the low cost of services provided. Wednesdays are market days and has a larger impact on clinic attendance, as it is off on labor days and the availability of money. Summer season had poor clinic attendance due intense heat and other mobility factors. The vast majority (>75%) of Aboriginal people in the Northern Territory (NT) live in remote or very remote locations. Children in these communities have high attendance rates at local Primary Health Care (PHC) centres but there is a paucity of studies documenting the reason and frequency of attendance. Such data can be used to help guide public health policy and practice. (Kearns et al., 2013)

## VI. RECOMMENDATIONS

Further epidemiological studies are required to gain a complete picture of health within the population, and successful implementation of the model elsewhere could be envisioned taking the trends into consideration. It is recommended that Community based research be undertaken to validate these preliminary findings. Analytical study designs to evaluate the association of risk factors, need to be done with a likely preponderance of non communicable diseases. Keeping in mind the trends such as days of economic viability, distance travelled, gender sensitivity etc there is tremendous scope for Improving and strengthening primary health care delivery in these remote inaccessible areas.

## ACKNOWLEDGEMENTS

The financial and Logistics assistance to LA by the Secretary of VSPM, and is greatly acknowledged. The authors wish to express their gratitude to the Subjects for their cooperation.

## REFERENCES

- [1] Basu, S. (1993). Health scenario and health problems of the tribal population in India. *Continuity and Change in Tribal Society*.
- [2] Census of India, Govt. of India - Ministry of Home Affairs, Official web-site | We also count people in India. (n.d.). Retrieved July 9, 2016, from <http://www.censusindia.net/>
- [3] Dongre, A. R., Deshmukh, P. R., Boratne, A. V., Thaware, P., & Garg, B. S. (2008). An approach to hygiene education among rural Indian school going children. *Online Journal of Health and Allied Sciences*, 6(4). Retrieved from <http://cogprints.org/5932>
- [4] Hassan, I., Anwar, P., Bilquis, S., Nabi, S., Rasool, F., & Munshi, I. (2014). Comparison of dermatoses seen in community health camps and a tertiary care centre in Kashmir. *Indian Journal of Dermatology, Venereology and Leprology*, 80(3), 214–220. <http://doi.org/10.4103/0378-6323.132248>
- [5] J. Borah, B. (2006). A mixed logit model of health care provider choice: analysis of NSS data for rural India. *Health Economics*, 15(9), 915–932. <http://doi.org/10.1002/hec.1166>
- [6] Jain, Y., Kataria, R., Patil, S., Kadam, S., Kataria, A., Jain, R., Shinde, S. (2015). Burden & pattern of illnesses among the tribal communities in central India: a report from a community health programme. *The Indian Journal of Medical Research*, 141(5), 663. <http://doi.org/10.4103/0971-5916.159582>
- [7] Kearns, T., Clucas, D., Connors, C., Currie, B. J., Carapetis, J. R., & Andrews, R. M. (2013). Clinic attendances during the first 12 months of life for Aboriginal children in five remote communities of northern Australia. *PloS One*, 8(3), e58231. <http://doi.org/10.1371/journal.pone.0058231>
- [8] Raza, W. A., Van de Poel, E., Panda, P., Dror, D., & Bedi, A. (2016). Healthcare seeking behaviour among self-help group households in Rural Bihar and Uttar Pradesh, India. *BMC Health Services Research*, 16, 1. <http://doi.org/10.1186/s12913-015-1254-9>
- [9] Sharma, G., Tamang, R., Chaudhary, R., Singh, V. K., Shah, A. M., Anugula, S., Thangaraj, K. (2012). Genetic Affinities of the Central Indian Tribal Populations. *PLOS ONE*, 7(2), e32546. <http://doi.org/10.1371/journal.pone.0032546>
- [10] Tyagi, S. K. R., Saluja, K., Chaturvedi, A., & Kapoor, A. K. (2010). Emerging health threats among a primitive tribal group of Central India. *Journal of Public Health and Epidemiology*, 2(2), 13–19.