

# Issues of Tribal Health in Odisha: an anthropological perspective



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## Overview of the presentation:

- ❑ Why tribal health study?
- ❑ Anthropological perspective of Tribal Health
- ❑ Issues and challenges of Tribal Health in Odisha
  - Tribal demography,
  - Health & Nutrition,
  - Genetic Disorders
  - Ethnomedical Practices
  - Ethical issues
- ❑ Concluding remarks

# Why Tribal Health Study?

- As India's economy continues to grow and the health of the population improves, there is a need for greater attention and resources to be allotted to **those population who have not benefitted from the country's economic growth and who continues to face high levels of health needs.**
- For this there is an **urgent need for a better understanding of how to improve health** by pursuing public health intervention research appropriate for different tribal populations of the country.
- During last few years there is a growing body of knowledge on the health needs of the indigenous populations of our country. But there is **a paucity of data** on how we can address these needs(Kar, 2012).

# Issues

❑ **Tribal Societies** and **Tribal Health** (disease profiles) are in **transition**.

- Tribes are not a monolith.
- Contrary to general population, Tribal Societies-like any other societies- are amenable to change- They are not static.
- Disease profile have shown transition

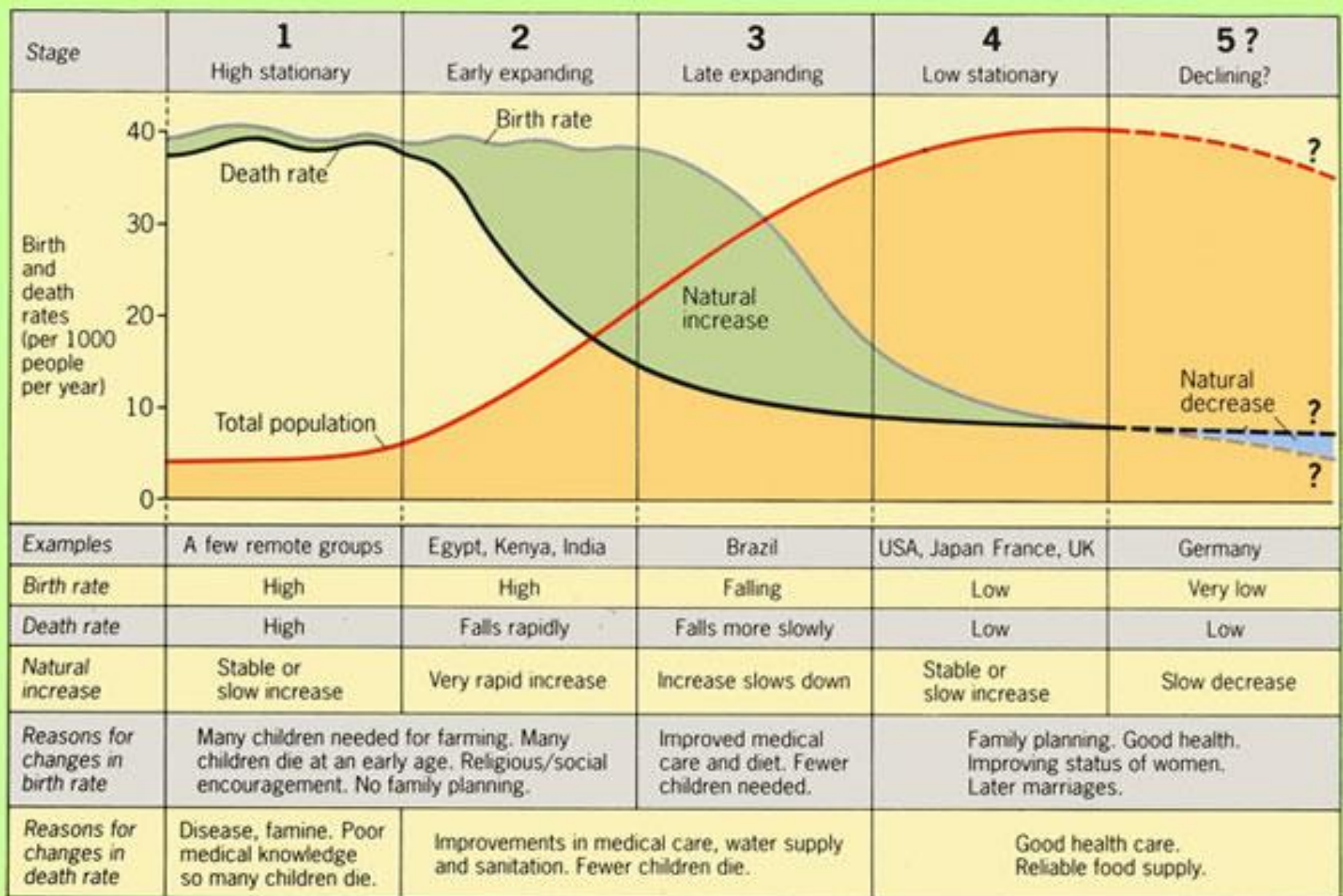
## Challenges

- How the healthcare needs of Tribal and the States strategy for intervention can match?
- How the needs can be reflected in the policy documents & implementation strategies?

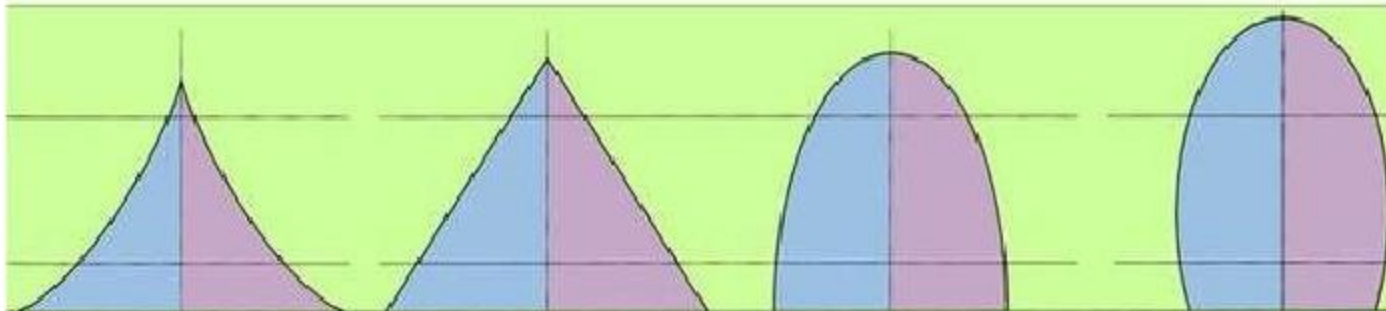
# Transitions

- Demographic transition
- Economic
- Epidemiological transition

# Demographic Transition



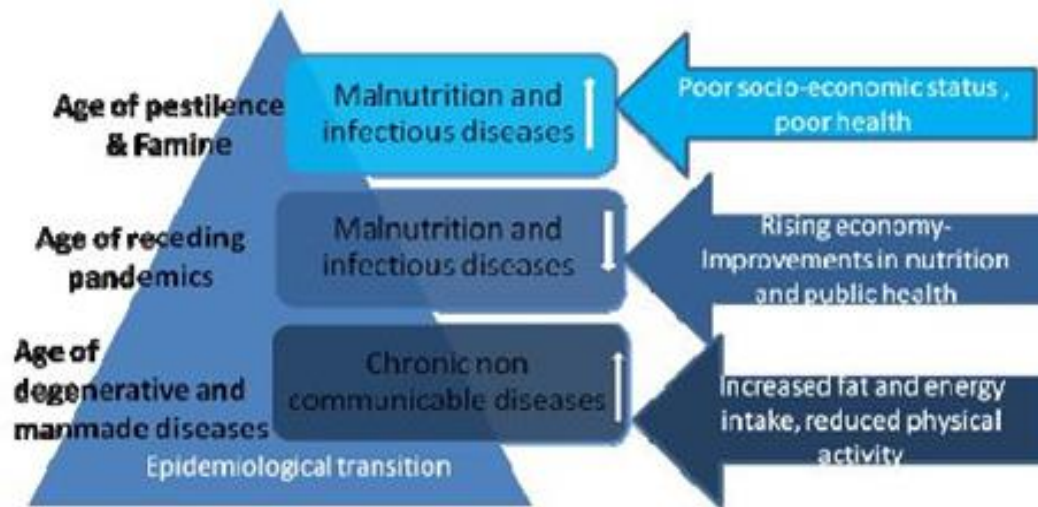
# Link to Population Pyramids?



Stage 1	Stage 2	Stage 3	Stage 4
Expansive.	Expansive.	Stationary.	Contractive.
Concave sides.	Straight sides.	Convex sides.	Convex sides.
High birth rate.	Still high birth rate.	Dedining birth rate.	Low birth rate.
High death rate.	Falling death rate.	Low death rate.	Low death rate.
Short life expectancy.	Slightly longer life expectancy.	Long life expectancy.	Longer life expectancy.
Rapid fall in each upward age group due to high DR.	Fall in DR so more people living into middle age.	An increasing proportion of the population is in the 65+ age group.	Higher dependency ratio.



# Epidemiological Transition



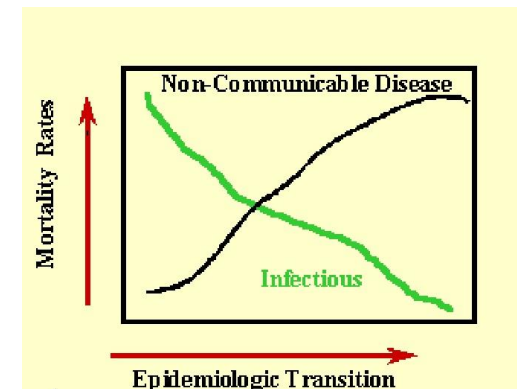
Stages of epidemiological transition

I. The age of “pestilence and famine”

II. The age of “receding pandemics”

III. The age of “degenerative and manmade diseases”

(Increased fat and caloric intake and decreased physical activity-rise of chronic, non communication diseases).



❑ Odisha is considered as a **demographic paradox**

# Health Transition

## The 4 stages of the health transition

	Phases	Socio-economic development	Life expectancy	Change in broad disease categories	Change within broad disease categories (proportionate mortality)
1*	Age of pestilence (infection) and famine	+	~30	Infections Nutritional deficiencies	CVD: 5-10% related to nutrition/infection (e.g. RHD, Chagas)
2*	Age of receding pandemics	++ (developing countries)	30-50	Improved sanitation : ↓ infections, ↑ diet (salt), ↑ aging	CVD: 10-35% Hypertensive heart disease, stroke, sequels of RHD and CHF
3*	Age of degenerative and man-made diseases	+++ (countries in transition)	50-55	↑ aging, ↑ lifestyles related to high SES (diet, activity, addiction)	CVD: 35-65%. Obesity, dyslipidemias, HBP, smoking → CHD, stroke, often at early age ; PVD (first in ↑ SES)
4**	Age of delayed degenerative diseases	++++ (western countries)	~70	↓ reduced risk behaviors in the population (prevention and health promotion) and ↑ new treatments	CVD <50% (delayed ↓ total CVD due to aging population & ↑ prevalence due to better treatment)

## Tribal Health: a. Community Level study and b. Hospital based study

Communicable  
Disease(CD)/  
Genetic Disorders



Non communicable  
Disease(NCD)

e.g. Malaria, diarrhea, TB/  
e.g. Haemoglobinopathies  
Disorders

e.g. Hypertension, Metabolic

## Anthropological Research on Tribal Health

Demography,  
epidemiology ,  
nutritional  
anthropometry



Population Genetics:  
ABO typing, HBS,  
G6PD, Thalasamea,  
HBE etc.



Genomics  
Multidisciplinary  
Decentralized

## **Anthropological perspective- What we mean by that?**

- Holistic appreciation of the specific health context(360°)
- Primary Data (giving emphasis to empiricism & peoples perspective)
- Putting '**Culture**' at the centre stage (Health is a complex product of Bio/Medical & Culture)

# **Critical Medical Anthropology in Anthropology**

(emerged in mid 1980's) Mishra,2013

‘a theoretical and practical efforts to understand and respond to issues and problems of **health, illness and treatment** in terms of the interactions between the **macro level political economy**, national level of political and class structure, institutional level health system , community level of popular and folk beliefs and action, **micro level of illness experience**, behaviour and meaning.....’(Singer 1995)

## Tribal Demography

- Odisha occupies a unique place in the tribal map of India.
- **Total 62** tribal communities in the state
- Total population 9 million constituting 22.8% of the states population

- Mayurbhanj – 58.72% (**Highest** , )

Nawarangpur -55.2%

Rayagada- 54.9%

Sundargarh -50.7%

Koraput - 50.5%

Kondhamal -50.3%

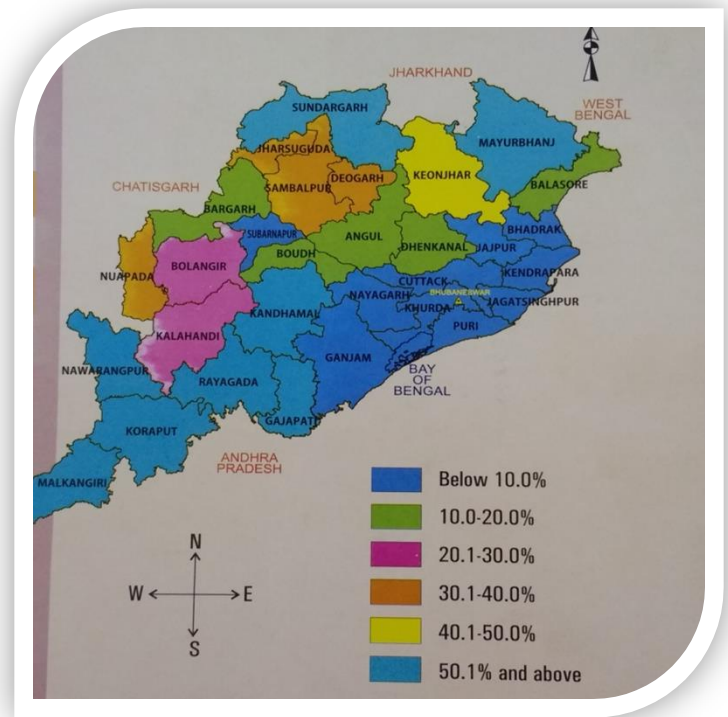
Gajapati - 47.8%

Keonjhar - 44.5%

Puri - 0.3% (**Lowest** )

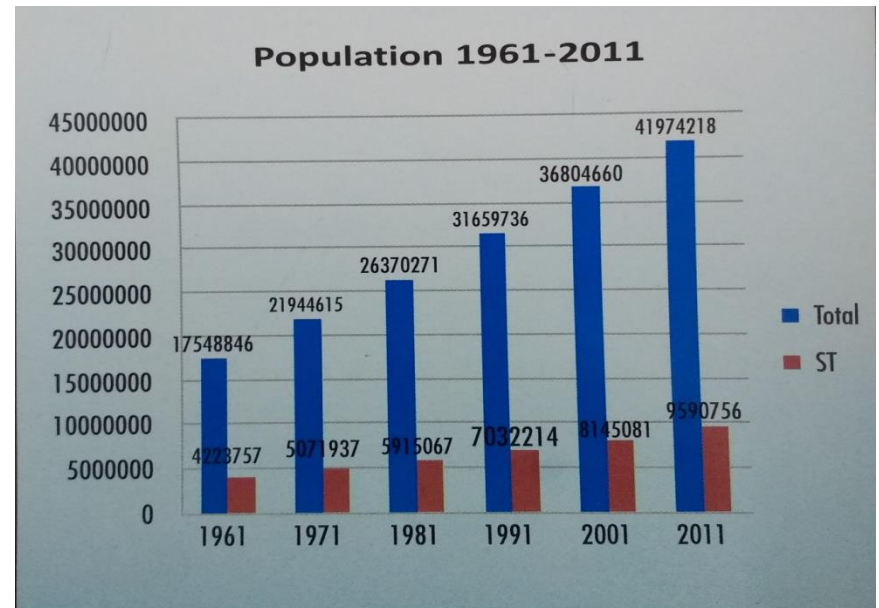
- **Total 13 PVTGs** tribal communities unevenly distributed in hilly regions

- It is interesting to know that population growth rate of some tribes is **declining** while it is increasing among others.



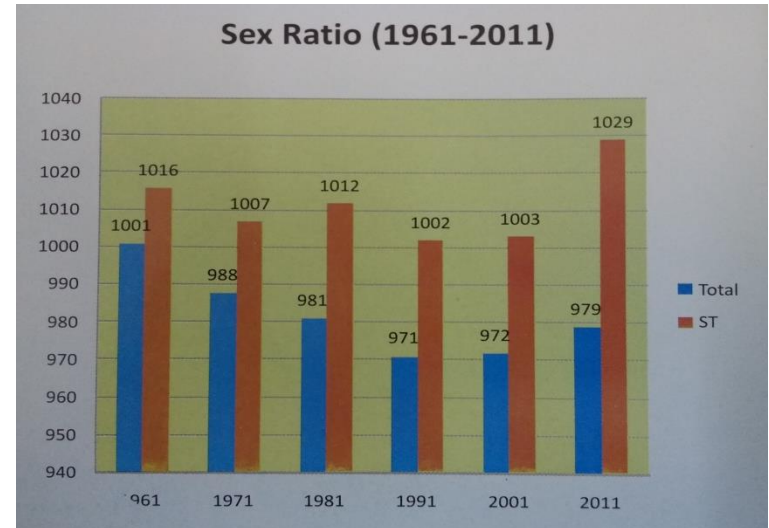
Source: SCSTRTI, Bhubaneswar, Odisha, 2015

- Tribal children start on par with others but fall well behind by the time they are **five** (Das et al 2010).





•Despite baseline aggregative patterns of demographic differential being favourable to tribes, there is rather strong indication that of late and in the near future Indian **tribals might be lagging behind the nontribal population in demographic transition** (e.g. in terms of slower pace of tribal fertility and mortality declines). Also, while gender relations among Indian tribes have historically been more balanced and egalitarian, an unfortunate trend of tribal gender bias conforming to the mainstream **anti-female pattern** (along with acculturation, assimilation and similar 'modernizing' processes) is increasingly discernable under current circumstances (Marahanta, 2000)



Source: SCSTRTI, Bhubaneswar, Odisha, 2015



- In the field of maternal and child health there are vast differences in the health status of mothers and children between tribal and non-tribal populations.

- According to NFHS3 data median **age at marriage** (16.3 years vs 18.1 years), **total fertility rate** (3.1 vs 2.68), proportion of pregnancies with no antenatal checkups (37.8% vs 22.8%), home vaccination (11.5% vs 4.3%). This progress has a significant impact on child mortality rate amongst tribals compared to general population.



(Source: P. G. Department of Anthropology, Utkal University Odisha 2017)

## Nutritional Health

- Tribal Populations continue to carry high burdens of **‘disease of poor’**, namely **under nutrition and infectious diseases**.
- **High level of chronic under nutrition** have been observed among child and adult population.
- Micronutrients **malnutrition** constitutes a major problem among tribals, including anaemia and iodine deficiency disorder.
- Tribal people in Odisha prefer boiled, baked and roasted food. Whenever they boil any cereal or millet they most often **do not separate the starch from the food** (Behura and Mohanty, 2006).

❑ **NFHS-3** survey, 47% of **tribal women** are having chronic energy deficiency (CED) compared to 35% among the general population.

❑ **Tribal females** are in more danger of developing metabolic risk at lower BMI, irrespective of age, clearly indicating an increasing tendency towards a double burden of disease (Kshyatriya, 2014).



Source: S. Baliargingh, 2013, Bellghar, Kandhamal, Odisha

- Consumption of **milk and milk product** is very low (SCSTRI,2006 and 2010).

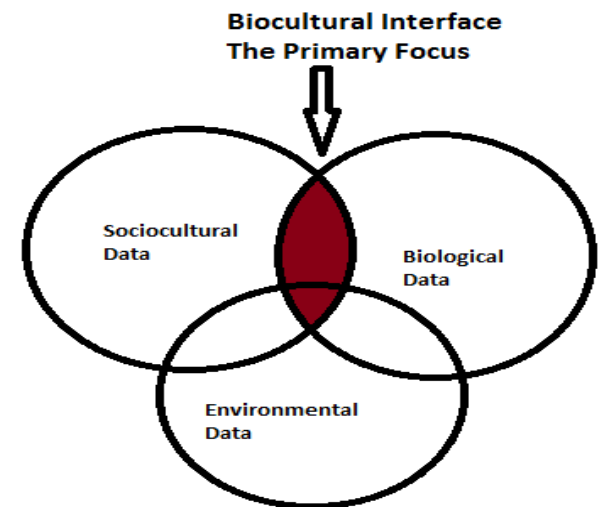


- Use of **oil is less, consumption of sugar** is also very low.  
(SCSTRI,2006 and 2010).

- Alcoholic drinks are very common:  
***Mohua, Handia and Salap***

❑ **Nutritional diversity** studies among the Saura, the Bonda, the Juang and the Koya reveal that having been **nutritionally underfed they carryout their activities in all kinds of circumstances** staining their body physiology. This trend undoubtedly pose question about the fundamental premise of balance nutrition that **what should be considered as optimum calorie or protein requirement norm of an individual**, belong which a man may be called semi starved or fully starved (Das P K, Mohanty, RP 2007).

❖ Protective ALDH2\*2 gene among Bondo highlanders, Odisha 2010 –J K Nayak, P K Das et al



The Integrative biocultural model



❑ **“Nearly 60% tribal children malnourished in state : A** startling percentage of 57.9 tribal children under the age of five have stunted growth in Odisha, while 29.3% are severely stunted because of malnutrition.....” *The Times of India and The Samaj, 16<sup>th</sup> Jan. 2015*

❑ **Malnutrition in Odisha’s Nagada**  
Highlights the Continuing Discrimination Against Tribals. After 19 children died of malnutrition in Odisha’s Jajpur district, the state machinery has finally kicked into action. But ground realities speak volumes on the standard of living of the **Juang tribal** people.

(Source :Sarada Jahangir on 29/07/2016;  
<https://thewire.in/54484/odisha-juang-malnutrition/>)



## ❑ Anthrax among Kutia Kandh (S. Baliarsingh, 2011)

**“The local population not only consume meat of dead animals but also store them for long time. There is an urgent need to change the food and behavioural practice of the local population like not to eat dead animals or leave them in the open”** *The New Indian Express, 14<sup>th</sup> june 2011*











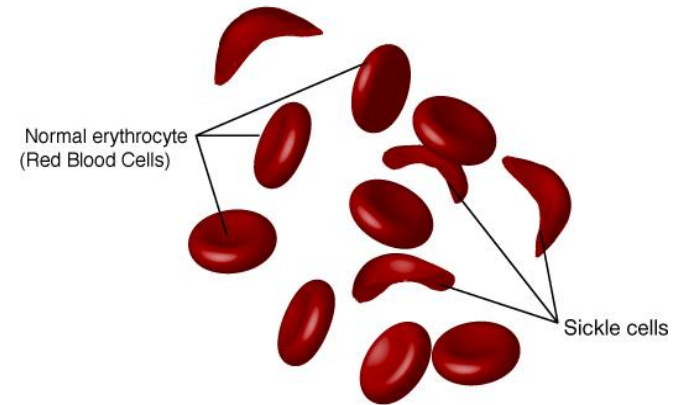
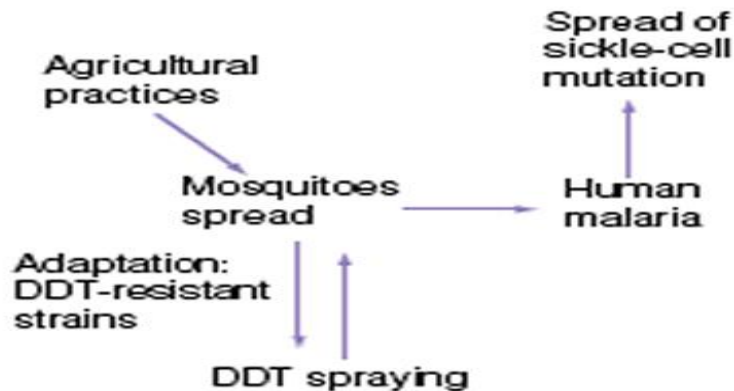
## INFECTIOUS DISEASES

- The other most common infectious diseases seen among tribals are **respiratory tract infections and diarrheal disorders**. 21% of children suffer at least two bouts of diarrhea every year and 22% suffer from at least two attacks of respiratory infections.
- Tribals are emerging as a **high-risk group for HIV/AIDS** as they migrate to urban areas driven by displacement or for employment opportunities.
- The prevalence of **tobacco use** is 44.9% among tribal men and 24% among tribal women.
- Malaria persists**, particularly among tribal populations living in forested areas and the prevalence of this has been found to be **rising** among some areas.
- At the national level tribals accounts for 25% of all **malaria** cases occurring in India and 15% of all falciparum cases.
- Prevalence of **tuberculosis** varies across tribal populations and highly especially in Odisha. (RMRC, ICMR, 2012).

# Genetic Disorders

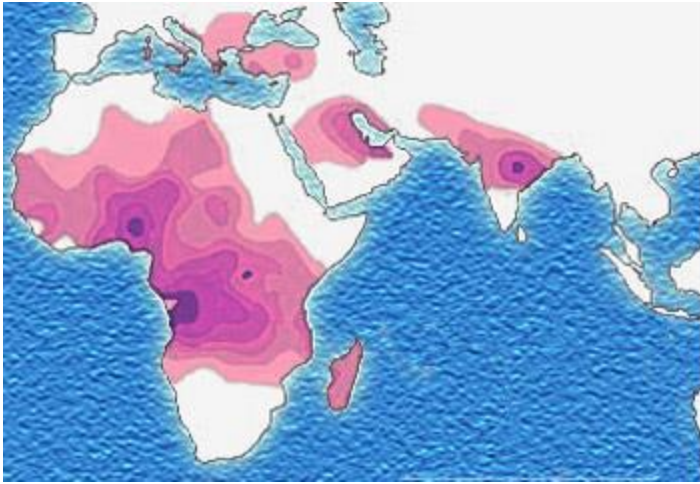
## (Haemoglobinopathies)

❑ Sickle cell trait prevalence varies from 0.5% to 45%, disease prevalence is around 10%. It is mostly seen among the tribals of central and southern India, not reported in North-East.



**Bio-politics and bio-citizenship in health care at local level: the story of sickle cell anemia in India (Patra, P K, 2015)** (Odisha, Chhatisgarh, Gujarat and Maharashtra)

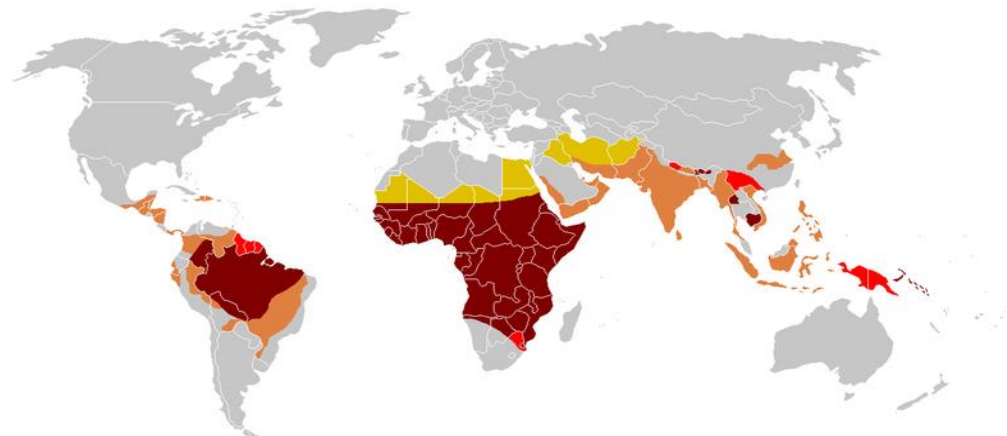
High prevalence rate and poor provisions for health care services for **sickle cell anemia** among several marginalized communities in India led some sufferers, community leaders, local health care providers to believe that “**it’s a poor man’s disease**” and they are being discriminated against at local and national level.



Distribution of the sickle-cell trait  
shown in pink and purple



Historical distribution of [malaria](#) (no longer  
endemic in Europe) shown in green



Modern distribution of malaria (Source: Wikipedia)

- ❑ The practice of tribal and territorial **endogamy** in a **smaller effective populations** results in **smaller marital distance and inbreeding**, leading to increased homozygous expression of rare recessive genetic characters.
- ❑ The incidence is higher in those states of India where the **consanguinity** is a common practice. (ICMR, Balgir, RS, 2005, 2007).



# Ethnomedical Practices

- It is a complex multidisciplinary system constituting the **use of plants, spirituality and natural environment.**
- Every known human society have its own concept regarding health and disease and also methods of coping with them .
- Traditional remedies are the part of the cultural and religious life of tribal.



Animal sacrifice , Bellghar, Kutia Kondha S  
Baliarsingh (2013)

## Ethnomedicine and its problem

Tribal healthcare system is experiencing a peculiar trend. In a way, biomedicine is taking a hegemonic position vis-à-vis ethno-medicine where many traditional practices are experiencing threat of extinction. The issue of accessibility and affordability are becoming larger issue in tribal healthcare with increasing medicalization and corporatization of healthcare.



Traditional healers, *Dishari*,  
*Nabarangpur*2017



*Luibuli*- Herbal medicine used by the menopause lady for joint pain  
(Bata roga), Nabarangapur, 2017

# **Non Communicable Diseases(NCD) among the Tribes of Odisha**

•Like all other developing countries, large scale urbanization/modernization has been taking place in India as well as in **Odisha with effective changes in lifestyles, occupational patterns, and dietary habits leading to appreciable increase in the prevalence of Chronic metabolic conditions like hypertension, cardiovascular diseases (CVD), diabetes and metabolic syndromes** (Mukhopadhyaya, et al 1996; Reddy, 1998; Banerji, et al 2003; Manimunda et al., 2011; Mandani et al., 2011; Meshram, 2012).

•Some tribes like the Jenu Kuruba tribe of Mysore (Hathur et al 2013), the Nomad tribes of Rajsthan (Sachdev, 2012) , Nicobarese tribal population of Car Nicobar Island (Manimunda et al 2011), the tribal groups of Nilgiris (Ramalingam et al. 2012), the tribes of **Odisha** and West Bengal (Mohapatra *et al* , 2015; Kshatriya and Acharya 2016) have been studied.



- The common conclusion from all the above studies is that **hypertension is on rise amongst the tribes.**



Fieldwork among tribes of Mayurbhanj,  
2013



Fieldwork among the tribes  
of Nabarangpur 2017

Table 1 Prevalence of Hypertension in Tribal Areas

Population / Place of study	Prevalence (%)		Reference
	Men	Women	
<b>Tribal</b>			
<b>Lepchas (Sikkim)*</b>	45.3	34.0	Mukhopadhyay et al.(1996)
Yerukala (Andhra Pradesh)*	2.8	1.2	Reddy (1998)
Khondh (Andhra Pradesh)*	7.8	11.5	Kusuma et al.(2004)
Santal (West Bengal)	9.8	13.9	Kshyatriya and Acharya (2016)
Santal (Odisha)	10.7	8.4	Kshyatriya and Acharya (2016)
Bhumij (Odisha)	12.9	16.4	Kshyatriya and Acharya (2016)
Bathudi (Odisha)	5.0	19.0	Kshyatriya and Acharya (2016)
<b>Kutia Kondh (Kandhamal, Odisha)</b>	1.02	0.20	Baliasingh & Mohapatra(2015)
Bhumij (Mayurbhanj, Odisha)	10.9	10.1	(Present Study 2013, 2015, 2016 & 2017)
Bathudi (Mayurbhanj)	8.2	4.4	
Savar(Mayurbhanj)	3.6	6.1	
Santal (Keonjhar)	5.2	1.3	
Bathudi (Keonjhar)	7.7	2.6	
<b>Munda (Jajpur)</b>	23.3	15.0	

# Ethical Issues

- **Rebati Kanhar**
- **16yrs**
- **Female;**
- **Kondh Community**
- **Khali Sahi, Boudh, Odisha**



*Source: 'Bana Balika' by Ramakanta Mahananda, The Samaj(Ravibar), June01-07, 2008*



Fieldwork by Manasi Majhi, 2014



## Ethical Guidelines and their fall out.

The demand for ethical conduct in human subject research as a byproduct of state-sponsored expectation to confirmation to ethical guidelines is meant to **protect the interests of both subject and researcher** from harm and exploitation. However, this is seen by many as a hindrance to carry out research in community set-ups due to operational aspects.



Source: Manashi, 2014

## Concluding remarks:

- Recent studies highlight increasing trend of non-communicable (life-style) diseases among the tribal communities of Odisha, also in India which was not traditionally stressed.
- State's over-emphasis on biomedicine has cornered the practices of ethno-medicine. With increasing cost of biomedicine and out-of-pocket expenditure better healthcare provision has become unaffordable for tribal people leading to further deterioration of their health condition.
- Due to institutional inadequacy, meeting ethical challenges in human subject research will pose challenges to conduct of health research, especially research on sensitive issues relating to tribal communities.

## Bibliography

Behura NK and Mhanty KK. 2006. Tribal Orissa: Readings in Social Anthropology. Dominant Publishers and Distributers, New Delhi.

Maharatna A. 2000. Fertility, mortality and gender bias among tribal population: an Indian perspective. *Social Science & Medicine* (50) 1333±1351

Mishra, Arima. 2013. Special Issues on Anthropology and Public Health: An Introduction. *Indian Anthropologist* 43(1): 1-16.

Mohapatra S., Satapathy K. C., Patra P. K. and Dash P. K. (2015). 'Epidemiology of Blood Pressure among some Tribes of India: Bhumij, Bathudi and Savar'. In *The Tribal Tribune*; 7(2):1-4.

Helman, C. 2000. Culture, Health and Illness (4<sup>th</sup> Edition), London.

McElroy A and Townsend P. K. 2004. Medical Anthropology in Ecological Perspective (4<sup>th</sup> Edition) Westview Press, USA

- Kshatriya G.K. and S.K. Acharya 2016. 'Triple Burden of Obesity, Under nutrition, and Cardiovascular Disease Risk among Indian Tribes'. In *PLoS ONE* 11(1): e0147934. doi: 10.1371/journal.pone.014793: 1-19.
- Balgir, R. S. 2006. Genetic heterogeneity of population structure in 15 major scheduled tribes in central-eastern India: A study of immuno-hematological disorders . *Indian Journal of Human Genetics* May-August 2006 Volume 12 Issue 2.
- Patra P.K. and M. Sleeboom-Faulkner (2011). Notions of Risk among marginalized communities in India: Sickle cell intervention programmes and risk as a precursor of change. *International Journal of Development and Social Research* (IJDSR), Vol.5, Pp. 47-61.
- Nayak, J. K and Das P. K. Nayak. A Case Study On Factors Influencing Protective Health Ecology For Alcoholism Among The Hill Bonda Tribal Group Of Odisha, *Man In India*, 94 (4) : 555-571.
- RMRC. 2012. Souvenir: ICMR Tribal Health Research Forum, 8<sup>th</sup>-9<sup>th</sup> August 2012. RMRC, Bhubaneswar, Odisha.



Thank You

