



**“POPULATION BASED DEMOGRAPHIC ANALYSIS OF THE TRIBAL AND URBAN
AREA OF RAIPUR DISTRICT”**

Monika Singh and Dr. Amit Kumar Dutta

School of Biological and Chemical Sciences, MATS University, Raipur-Pandri Campus, Raipur (CG) - 492004.

***Correspondence for Author: Dr. Amit Kumar Dutta**

School of Biological and Chemical Sciences, MATS University, Raipur-Pandri Campus, Raipur (CG)-492004.

Article Received on 18/10/2015

Article Revised on 08/11/2015

Article Accepted on 28/11/2015

ABSTRACT

Demographic analysis or Pedigree analysis is an analysis of traits in a several generations of a family, in which the heritability of certain characteristic and features is studied. After Mendel's work this study started performing in the human beings. Demographic analysis is performed in the Tribal and Urban area of Raipur District, in which individual were interviewed and asked for their family history and hematological study. A study was carried out from generation to generation in which different diseases i.e., Diabetes, Cancer, Tuberculosis and Asthma were studied and compared on the basis of statistical analysis. All the Parameters were planned according to the earlier Researcher's those who already worked in these fields. The number of Cancer Patients was found to be the most as compare to other diseases. Finally it was reveals that these diseases were inherited either by their ancestors or due to some environmental factors. In Humans, Controlled Crosses cannot be made, so Geneticists must resort to scrutinizing family records in this hope that informative mating has been made that can be used to deduce dominance and distinguish diseases. From our study, it has also been suggested that the less amount of Vitamin D or sun exposure in childhood may cause Diabetes Type I.

KEYWORDS: Demography, Counseling, Pedigree, Data Monitoring, Result Analysis.

INTRODUCTION

Pedigree analysis is an analysis of traits in a several generations of a family, in which the heritability of certain characteristic and features is studied. After Mendel's work, this study started performing in the Human Beings. A Study is carried out from generation by generation in which the diseased and other segregated characters are identified. Finally from the above surveyed of 4 types of different parameter and case Family History, one thing is finally proved that most of the diseases are having risk factor and few of them arises from their background history. In Humans, Controlled Crosses cannot be made, so Geneticists must resort to scrutinizing family records in the hope that informative mating has been made so that it can be used to deduce dominance and distinguish diseases. It has also been seen that due to variability in the age of onset of a disease, though the statistical method commonly used. Study on local area for checking the increasing ratio of diabetes patient, with increment of ages by pedigree analysis. A family consisting 5,021 individuals were interviewed out of which 20 people were diabetic individual. A statistical study was performed by graphical method. This study conclude that the diabetes is a heritable disease and this can segregate to another generation (affecting age may be 30-45). The environmental stress management and proper care may reduce the risk of diabetes in the offspring.

Diabetes is a disorder in the metabolism of the Human Body which led to the disfunctioning of the Pancreas and results in the increase of blood glucose level. From a data source, the percentage of Diabetic Patient in adult population in 2013 was 8.3% (382 million People).^[1] India was estimated to have the highest number of diabetes cases in 2000-31.7 million and by 2030 it is estimated to rise to 79.4 million. It has been seen that Type 2 Diabetes mellitus is more prone in the population and been increasing day by day. The main objective of my study was to analyze the age at which the people are affected by this disease. In this, the study of individuals of different family has conducted to find out the ratio of diseases occurring in Chhattisgarh state, specially a comparative account between Tribal and Urban area. The ecological realistic low.^[3] Cancer, also known as a malignant tumor, is a group of diseases involving abnormal cell growth with a potential to invade. Approximately 5-10% of Cancers are due to genetic defects inherited from a Person's Parents. It is investigated by medical imaging and confirmed by Biopsy. In Developing World nearly 20% of Cancers are due to infections such as Hepatitis B, Hepatitis C, and Human Papillomavirus (HPV).

Recent intensive efforts to improve collection and reporting of data on Tuberculosis (TB) are shedding new light on the epidemic, revealing that there are almost half a million more cases of the disease than previously

estimated. WHO's "Global Tuberculosis Report 2014", published today, shows that 9 million people developed TB in 2013; a mortality rate of TB is still falling and has dropped by 45% since 1990, while the number of people developing the disease is declining by an average 1.5% a year. Medicine has been improved to treat TB and further research is still going on. Abortion is the deliberate termination of a human pregnancy, most often performed during the first 28 weeks. According to WHO, every year in the world there are an estimated 40-50 million abortions. This corresponds to approximately 125,000 abortion per day.^[2,5,7]

MATERIAL AND METHODS

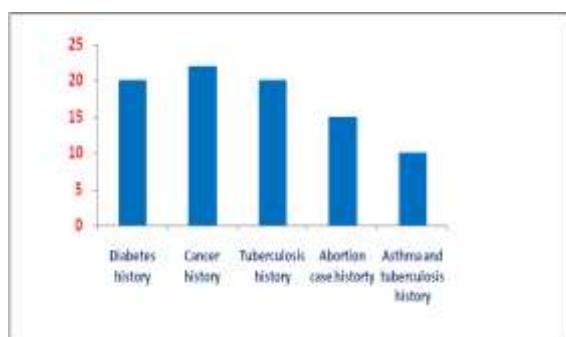
The whole work and population data were collected from the tribal area of Chhattisgarh region and also the urban area of Chhattisgarh to compare the population based

study. For our study we have taken and selected different types of data specially those background and having the history of Diabetes, Cancer, Tuberculosis and Asthma. The selected cases are served followed by their family history as well as pedigree analysis and on the same time we had also seen their Hematological Parameter also by simply pricking their Peripheral Blood.

Pedigree Analysis

We had analyzed, surveyed and screened the many families of tribal area. Particularly we had screened twenty families where most of the cases we found there is a history of Diabetes in their parent. In few families we get the Cancer History and also get Tuberculosis history. Depending on the case history, we were separated the different samples according to the different parameters.^[2,8]

Area of Collection	Diabetes History	Cancer History	Tuberculosis History	Abortion History	Asthma & Tuberculosis History
Tribal	9	12	12	5	7
Urban	11	10	8	10	3
TOTAL	20	22	20	15	10



RESULTS AND OBSERVATIONS

Section: I

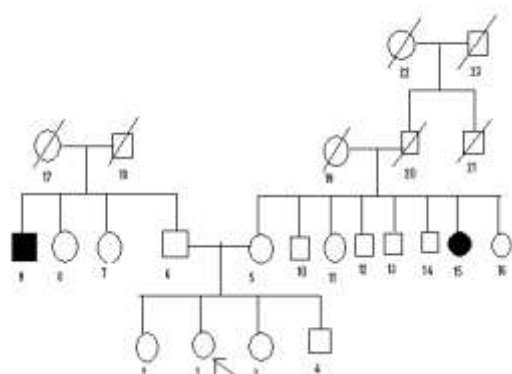
Sample Code No: DM01

Demography

Age/Sex: 25 Yrs/F

Address: Ayodhya Nagar, Dist- Mahasamund(CG)

PEDIGREE



COMMENTS

1 : Proposita Target Progeny
 2-8, 10, 12-14, 16: Normal (Healthy)
 9, 15 : Diseased (Diabetes mellitus)
 17-23 : Death (Normal)

REMARKS

The Target Progeny (Proposita) family is having two cases of diabetes. The proposita is having 25% chance to get affected from both side.

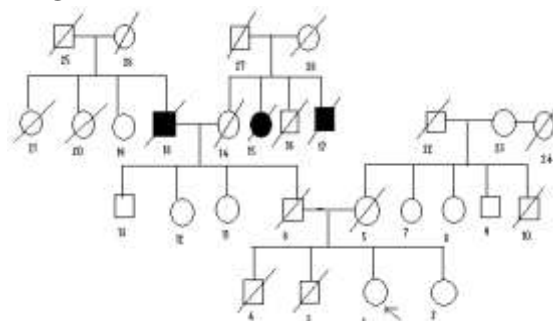
Sample Code No: DM02

Demography

Age/Sex: 23 Yrs/F

Address: Kausik Colony, Mahasamund (CG).

PEDIGREE



COMMENTS

1 : Target progeny (Proposita)
 2,7-9,11-13,23 : Normal.
 3-6,10,14,16,20-22,24-28: Death (Normal).
 18 : Death (Tuberculosis).
 15, 17 : Death (Diabetes mellitus).

REMARKS

The Target progeny is Proposita. There are two cases of Diabetes mellitus in family and one case of Tuberculosis. So, there is 25% chances to get Diabetic and 12.5% chance of Tuberculosis.

RESULT ANALYSIS: [SECTION: I]**Diabetes History**

In the case history of diabetes family, it showed that in most of the families there were history of diabetes in their family background. Most of the cases showed the similarities in which we can focus the result. But in few of the cases there were no history of diabetes. Total 9 cases were screened from Tribal area of Raipur District specially the area of Mahasamund side. Similarly, on the same time we have also screened 11 families those who were belonging to the Urban area of Chhattisgarh state. In both findings all the data suggested and showed that there were the similarities in their case history where previously Diabetes was there. But few of the cases question arises that how it comes suddenly to their body as well as in their family. It may be the effect as well as side effects of their life style, food habits and other religious or superstitious reasons.

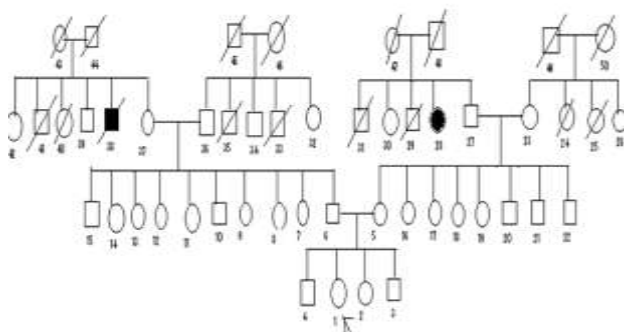
Section: II

Sample Code No: DM04

Demography

Age/Sex: 15Yrs/F

Address: Imli Bhata Mahasamund (CG)

PEDIGREE**COMMENTS**

1 : Target progeny (Proposita).
 2-23, 26-27, 30, 32, 34, 36-37, 39, 42: Normal.
 38 : Death (Diabetes mellitus).
 28 : Diseased (Cancer).
 24-25, 29, 31, 33, 35, 40-41, 43-50 : Death (Normal).

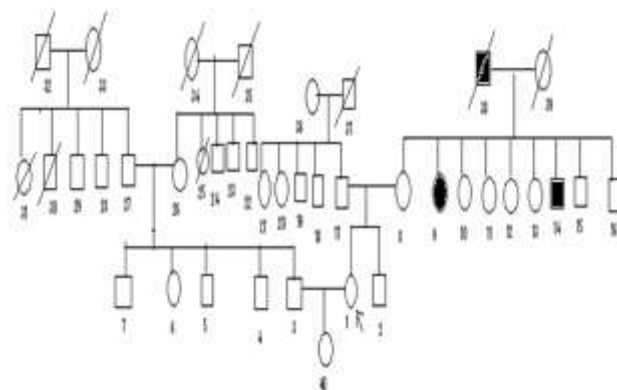
REMARKS

The Target progeny is Proposita. Proposita is having 12.5% chance to get diabetic and 12.5% chance of cancer.

Sample Code No: DM10

Demography: Age/Sex: 35Yrs/F

Address: Imli Bhata Mahasamund (CG).

PEDIGREE**COMMENTS**

1 : Target progeny (Proposita).
 2-8, 10-13, 15-24, 26-29, 36, 40: Normal (Healthy).
 9, 14 : Diseased (Cancer).
 25, 30-32, 34-35, 37-39: Death (Normal).
 33 : Death (Cancer).

REMARKS

The Target progeny is Proposita. There are three cases of cancer from maternal side. So, Proposita is having 75% chances of cancer.

RESULT ANALYSIS: [SECTION: II]**Cancer History**

In the case history of Cancer family, when we screened the family history of Tribal area, there were 12 cases and on the other hand in urban area, there were 10 cases in our study. Most of the cases showed that the cancer has been inherited from previous generation. In our study, we found that the cancer was present in recessive stage but because of the inheritance it gets dominant in some cases. The cases without any family history of cancer have also been screened but we can't find the possible reason behind the presence of cancer in those people.

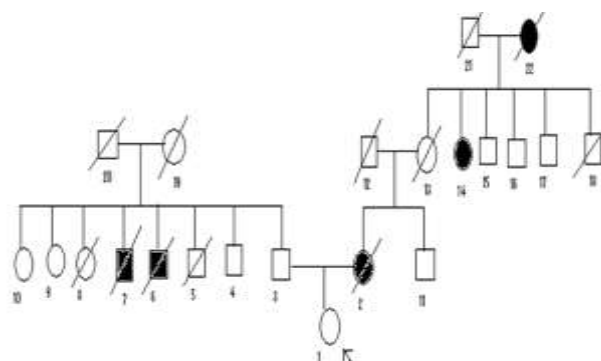
Section: III

Sample Code No: DM12

Demography:

Age/Sex: 23Yrs/F

Address: Amlidih Raipur (CG)

PEDIGREE

COMMENTS

1 : Target Progeny (Proposita).
 5, 8, 12-13, 18-21: Death (Normal).
 3-4, 9-10, 15-17 : Normal (Healthy).
 14 : Diseased (Tuberculosis).
 2, 6-7 : Death (Cancer).
 22 : Death (Tuberculosis).

REMARKS

Target progeny is Proposita. There is 1 case of Tuberculosis and three cases of cancer. So there is 12.5% chance of Tuberculosis and 75% chance of cancer.

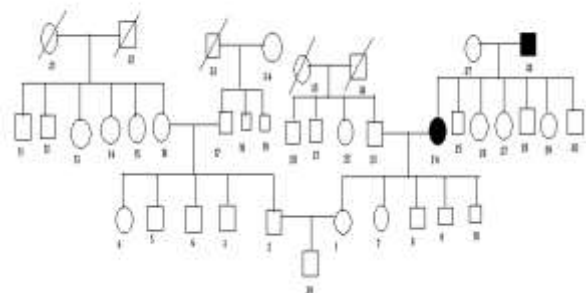
Sample Code No: DM05

Demography

Age/Sex: 26Yrs/F

Address: Imli Bhata Mahasamund (CG).

PEDIGREE



COMMENT

1 : Target progeny (Proposita).
 2-23, 25-30, 34, 37: Normal.
 24, 38 : Diseased (Tuberculosis).
 31- 36 : Normal (Death).

REMARKS

The Target progeny is Proposita. Family is having 2 case of diabetes. There is 35.5 % chances to get Tuberculosis.

RESULT ANALYSIS: [SECTION: III]

Tuberculosis History

These diseases mostly affect the aged population and led to the most cases of mortality. In our case study, we screened overall 20 family history and most of these were showing Tuberculosis cases, in which most of them were from tribal area specially 12 cases as compared to 8 cases from urban area in Chhattisgarh region. We found that this disease has been inherited by past generation to current generation. Few cases did not show any family history of Tuberculosis, then the questions arises that what is the reason behind this disease occurrence. It may be because of food habit and their rural background or less facility of health care or hospital or may be the believes or myths.

Section: IV

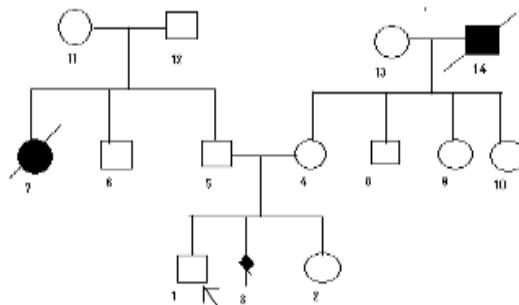
Sample Code No: DM27

Demography

Age/Sex: 16Yrs/M

Address: Imli Bhata Mahasamund (CG).

PEDIGREE



COMMENTS

1 : Target Progeny (Proband)
 2, 4-6, 8-13: Normal (Healthy)
 7, 14 : Death (Diabetes mellitus)
 3 : Abortion.

REMARKS

The Target progeny is Proband. There are two cases of Diabetes mellitus i family. So, Target progeny is having 35.5% chance to get diabetic and also an abortion case.

RESULT ANALYSIS: [SECTION: IV]

Abortion History

In our present study, we screened that the there were total 15 cases of abortion in which 5 cases were from Tribal area and 10 cases were from Urban area. We observed that there were many reasons for abortion cases. Age is one of the most important factors. The Marriages of Girl is below age (18Yrs) and marriage with Aged Persons. Education & Career are also the second most factors for this. We found that less educated people mostly prefer this and that may be under the Family Pressure. Improper food as well as balanced Diet led to improper health and this may led to an abortion history.

DISCUSSION

Chhattisgarh is one of the states where developments of Information Technology and Plant as well as Herbal Sector are the two burning & discussable point for our Country. But the achievement in General and Public Health were not that much which we can appreciate at the top most level.^[4,6] It may be due to the poverty, education or awareness because in most of places still now there is not a single light of education reached to them. After seeing and discussing this type of criteria, we selected this topic to find out the basic problem and relation between them. Our complete work was based on the population wise Demographic Analysis and to see the any correlation or any relationship is responsible or not.

All the Parameter was planned according to the earlier Researcher's those who already worked on that but not that much of references we could not get among the Chhattisgarh region. Finally from the above findings, we can conclude that those who are having the history of diabetes, they should take care about their food habit and also take care of their new generations because still now in our finding we get mostly that all inherited from there background family history.

On the other hand, those who are having the history of Cancer, they should take some prevention in their life style, food habit and other's necessary nutrients for their daily life because risk factors are there in majority of the cases.

Similarly, in the Tuberculosis and Asthma Family History, most of the families are having these two cases on record. Those who were having the Asthma history in their Forefather's, the new generation found to be in Asthma affected and the same data were collected in the history of Tuberculosis. So, after screening and comparing all those data, it may be concluded that those who are having the background of Asthma and Tuberculosis, they should take care about their health by taking healthy nutritious food and also avoid that type of food which may increase the chance of Asthma and Tuberculosis.

Finally from the above surveyed of 4 types of different parameter and case family history, one thing is again proved that most of the diseases are having risk factor and few of them arises from their background history. The Tribal family of Chhattisgarh state are also very responsible for that type of diseased over in the metro city area are also the reason of that diseases. So, it should conclude that if the life style will be simpler and as prevention is better than cure.

CONCLUSION

Pedigree is the study of the generation of an individual through which one can pre assume health related issue they may adhere. Diabetes is a disease which has a genetic component. It includes environmental factors such as diet and oxidative stress, which increases with the increment of the age of an individual. As the environmental stress is increasing day by day one should be strict towards the diet and exercise in daily routine. From a study it has also been found that the less amount of Vitamin D or sun exposure in childhood may cause the different types of disease syndrome also. Though it is the beginning of our work, further long follow up study required for the final conclusion of this Population based study.

ACKNOWLEDGEMENT

We are really thankful to the Hon'ble Chancellor and Vice-Chancellor for providing us to carry out this population based Research at School of Biological &

Chemical Sciences, MATS University, Raipur (CG). We owe our deep gratitude towards all the Faculty Members and the Colleagues of the MATS School of Biological & Chemical Sciences. Our sincere thanks towards the Family Members those who are directly and indirectly involved in this population based Research Work.

REFERENCES

1. Deo SS, Gore SD, Deobagkar DN, Deobagkar DD; Study of Inheritance of Diabetes Mellitus in Western Indian Population by Pedigree Analysis. JAPI, 2006; 54: 441-444.
2. Dutta A.K; A Clinico- Mycological Study of Superficial Dermatophytes. International Journal for Pharmaceutical Research Scholars (IJPRS), 2014; 3(1): 138-142.
3. Finer LB, Henshaw SK; Disparities in rates of unintended pregnancy in the United States. Perspective on Sexual and Reproductives Health, 2001; 38(2): 90-96.
4. Lopez AD, Colin DM, Cristopher JLM; Global and regional burden of disease and risk factors: Systematic analysis of population health data. Science Direct, 2006; 367: 9524.
5. Dutta A.K; Hypodiploidy And Chromosomal Polymorphism is an Alarming Marker For Spontaneous Abortion In Young Mothers. 29th ISHG CME And Workshop On Human Genetics, Bangalore (India), 2004; 102-106.
6. Lee SC, Pu YB, Chow CC, Yeung VT, kO GT, So WY; Diabetes in Hong Kong Chinese: Evidence for familial clustering and parental effects. Diabetes Care, 2000; 23: 1365-68.
7. Pociot F, McDermott MF; Genetics of Type 1 Diabetes mellitus. Genes and Immunity, 2002; 3: 235- 49.
8. Wild S., Roglic G., Green A., Sicree R., King H; Global prevalence of diabetes: Estimate for the year 2000 and projections for 2030. Diabetes Care, 2004; 27: 1047-53.