

Short Communication

VILLAGE OF TWINS: A MYSTERY

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ABSTRACT

Twins are unique in nature. The use of twins in genetic research is well recognized. Monozygotic (MZ) and dizygotic (DZ) twin pairs provides valuable insights into the relative contributions of genetic and environmental influences. A village in South India comprises of majorly twins which remains a mystery to the scientific world as the reason for this genetic cause is still unknown. The rate of twinning in this particular village is several folds of the global average rate. The exact cause of this peculiar phenomenon directs to research to reveal the exact cause of this rate of twinning in one particular village.

Introduction

Twins are two offsprings from a single birth. Twins can be either monozygotic (Identical) or dizygotic (Non-identical). Monozygotic twins result from a single fertilized zygote which divides into two separate embryos. Dizygotic twins are a result from the fertilization of two separate zygotes which gets implanted to form separate embryos.

Research involving twins are unique in nature as they have the ability to correctly isolate a genetic characteristic and determine its impact on human body. Twin studies enable a researcher to gather the

evidence on the influence of heredity due to genetic variations as they are difficult of to be interpreted.^{1,2} The genetic basis of complex traits can be best explained using twins. To yield the maximum potentiality of twin studies worldwide registers of data are established.³

An insight into the variations due to genetic and environmental factors on human physical, psychological and behavioural traits can be established through the research carried out among twins.⁴

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Figure 1: Research Team and Twins of Kodinhi Village, Kerala, India



The nature of twinning itself provides knowledge of human development. In clinical dentistry, twins form a unique source of investigations pertaining to origin and natural course of various diseases.⁵

TWIN VILLAGE

A routine oral health treatment camp was conducted in **Kodinhi** (11.0410° N, 76.0830° E), a village in Malapuram District, Kerala, India (28th September 2013) as part of the out-reach program of the Department of Public Health Dentistry, Yenepoya Dental College, Mangalore, Karnataka, India. To our surprise, the subjects who turned up for the treatment were twins in large numbers, both young children and adults. 56 Twins (49 monozygotic twins, 6 dizygotic twins and one triplet) presented for the examination. Following which an investigation was carried out (September 2013 – March 2014) to analyse the dento-

facial characteristics, salivary biomarkers, oral hygiene status and periodontal condition of the twins from the village. (Figure 1)

Kodinhi village which has a population of only 2000 villagers took the world by surprise when the locals found an unusual and astonishing increase in the number of twins. Twins in Kodinhi are found in around of 35 out of every 1000, whereas that found in rest of the country is 4 in 1000 and in the world 8 in 1000.⁶ Sixty pairs of twins were born in the last five years alone and the rate of twinning is increasing year after year.⁷ The current estimates adds up to 204 pairs (408 individuals) of twins and two sets of triplets, of which approximately 79 pairs are aged below 10 years. The astonishing fact that arises a question in the mind of the scientific community is that women married off from this village and those married to the youth in Kodinhi too have given birth to twins.⁸ The mind puzzling phenomenon of twins birth is a matter of

research to find the genetic, biological and environmental factors contributing to such a cause.⁹

This phenomenal twinning pattern is not a unique feature to Kodinhi, a similar observation was found in a town called Igbo-Ora in Nigeria, Africa. Though no direct correlation between dietary factors and twin birth was established to date, but in a study conducted by the researchers from University of Lagos Teaching Hospital, found that a chemical found in the peelings of a widely consumed tuber by the Igbo-Ora women could be the possible explanation for the high level of multiple births. As the dietary factors of the people in Kodinhi are not so different from rest of the people in the state of Kerala, no relation between dietary factors and twin birth can be concluded.¹⁰ The reason for unique nature of twin birth in a particular village is a mystery to the scientific world and a matter for research.

CONCLUSION

To conclude, the etiology behind the high rate of twinning in this particular village in Southern India is still a mystery to the scientific world.

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