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Variations in the Expression of Genetic Myths Among Twins-A Comparative Evaluation

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ABSTRACT

Variations in the expression of genetic myths between twins is a high yielding topic as the literature available is scanty. Very few studies were available on the expression of different genetic myths. This study was conducted to observe the variations of genetic myths in twins-both monozygotic and dizygotic. After taking an informed verbal consent, data was collected from three pairs of twins (2 pairs dizygotic and 1 pair monozygotic). The results were tabulated and evaluated. Figures were also included. Expression of some of the genetic myths varied between twins from the study. Even in the monozygotic twins, the results differed. This study provides data for understanding the expression of genetic myths among twins.

KEYWORDS Genetic myths, twins, expression, variations

INTRODUCTION

There are a list of characters like arm folding, clasping of hands, hitchhiker's thumb, bent pinkie,darwin's tubercle, lengthier 2nd toe, type of ear wax, attached ear lobe, cheek and chin dimple,mid-digital hair, tongue rolling etc which are called genetic myths but are proven mostly not to have a genetic influence on their expression. Falk and Ayala [1] in their research found that the pattern of folding of arm and hand clasping is largely inherited. But Wiener[2] showed that there is no influence of genes in their expression. When it comes to clasping of hands, Reiss[3] reported that there is a little genetic influence on this character. Winchester [4] claimed that dimples are dominant to non-dimples. According to Bhanu and Malhotra [5] the occurrence of cleft chin range from 4 to 71 percent in Indian populations. Lebow and Sawin [6] first suggested that cleft chin was a genetic character. Thus it is difficult to come to a conclusion regarding the genetic control of expression of genetic myths. The present study is done to evaluate the variation in the expression of genetic myths among twins both monozygotic and dizygotic.

MATERIALS AND METHODS

Data was collected from three pairs of twins-one pair monozygotic (both females) and two pairs dizygotic (one pair-males and other females). An informed verbal consent was taken and the information was gathered. Relevant pictures were taken by using mobile phone. Demaographic data was also obtained.

RESULTS

Table 1: Characteristics of the twins

S No	Feature	Dizygotic -females		Monozygotic-females		Dizygotic-males	
		Twin-1	Twin-2	Twin-1	Twin-2	Twin-1	Twin-2
1.	Height	5′	5′5″	5′1″	5′2″	5′5″	5′6″
2.	Weight	52kg	62kg	48kg	48kg	65kg	60kg
3.	Blood group	O+	B+	B+	B+	B+	B+
4.	Hair colour	Black	Black	Black	Black	Black	Black
5.	Hair texture	Wavy	Curly	Curly	Curly	Curly	Wavy
6.	Handedness	Right	Right	Right	Left	Right	Right
7.	Ear shape	Square	Square	Round	Round	Round	Narrow

Table 2 : Expression of genetic myths

S No	Genetic myth	Dizygotic -females		Monozygotic -females		Dizygotic -males	
		Twin-1	Twin-2	Twin-1	Twin-2	Twin-1	Twin-2
1.	Folding of arms	Right	Left	Left	left	Right	Right
2.	Cheek dimple	No	No	No	No	No	No
3.	Chin dimple	No	No	Yes	No	No	No
4.	Clasping hands	Right	Right	Left	Left	Right	Right
5.	Hitchhiker's thumb	No	No	Yes	Yes	No	Yes
6.	Attached ear lobes	No	No	Yes	Yes	No	Yes
7.	Darwin's tubercle	Present	Present	Absent	Absent	Absent	Absent
8.	Mid-digital hair	Present	Absent	Absent	Absent	Absent	Absent
9.	2nd toe lengthier than great toe	No	No	No	No	Yes	Yes
10.	Ear wax	Wet	Wet	Wet	Wet	Wet	Wet
11.	Iris colour	Black	Brown	Black	Black	Black	Black

Fig 1: left and right ears of monozygotic pair-both females

Fig 2: right and left ears of dizygotic pair-both females-Darwin's tubercle is seen

Fig 3: right and left ears of dizygotic pair-both males

On comparison of the parameters, mixed results were observed. The blood group of the dizygotic female pair was different. Hair texture of both dizygotic pairs was dissimilar. Handedness of monozygotic pair was not the same which is quiet interesting. And the ear shape of the dizygotic males was unlike. When the expression of genetic myths was noticed, folding of arms was different in dizygotic female pair; chin dimple was seen in only one of the monozygotic female pair. Hitchhiker's thumb and attached ear lobes were observed in only one of the dizygotic male twins. Mid-digital hair was seen in one of the dizygotic female twins and in the same pair, iris color differed.

DISCUSSION

Genetic myths are some of the characters which are not completely proven to be under the genetic influence. Studies on different myths reveal diverse facts. Studies on bent little fingers[7,8,9] show that there is a little genetic influence on the expression of bent little finger. Beckman [10] reported that cleft chin is dominant, but under the influence of environment. When the character of arm folding is evaluated, in most populations, slightly more than half of people had left arm on the upper side-McManus and Mascie-Taylor [12]. Glass and Kistler[12] , having decided that anyone with one or both thumbs having an angle equal to or greater than 50 degrees had the hitchhiker's thumb trait. It is evident that further studies have to be conducted to derive at proven conclusions. The present study represents the data collected from three pairs of twins-both monozygotic and dizygotic regarding the expression of genetic myths. There is a variation in the expression of some of the characters between the twins.

CONCLUSION

The study provides the data of different expressions of characters done exclusively on twins. The study showed varied results. Expression of some of the genetic myths was unlike between the twins. This can be further evaluated by collecting large data to derive finer conclusions.

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