



## Unusual preference of blue clothes in children with congenital cyanotic heart disease (CCHD)



### Introduction

Chronic diseases constitute a major portion of illnesses in children. There have been advances in diagnostic and therapeutic methods of these diseases but many times the emotional dimension of a chronic illness is overlooked. Most chronic diseases carry a social stigma with them faced by either the patient or their family. India is home to many chronic conditions like tuberculosis, HIV, chronic kidney diseases. Most patients and families try to hide these major illnesses in some way. In our tertiary care referral center (Medical college and general hospital), we get a large number of congenital cyanotic heart diseases which are often unoperated due to financial reasons and unawareness. Over the years, we have noticed a preferential colour of blue clothes worn by these patients or their parents. We conducted a study to determine if this was just a coincidence (see Fig. 1).

### Medical hypothesis

As unoperated congenital cyanotic heart disease is a chronic illness,



Fig. 1. Blue colour worn by both mother and child who is a diagnosed case of cyanotic heart disease. (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

blue clothing maybe used to camouflage the cyanosis. This observation has not been published before.

### Evaluation of hypothesis

We included 70 children (< 2 years) with congenital cyanotic heart diseases (group A) and another 70 age and sex matched children with other illnesses (group B), admitted in the pediatric department of our hospital. Institutional ethics committee approval had been taken. We observed the colour of clothes of the child and mother in both groups. Photographs of all patients were taken on the day of admission after consent from both parents (see Table 1)

Shades of blue were worn by 46(66%) in group A and 29(41%) in group B. This observation was found to be statistically significantly ( $p = 0.004$ ). Out of the 46, 24 children wore shades of blue and 16 mothers wore shades of blue. In the remaining 6 cases, both the mother and child wore shades of blue. The preference of blue was correlated with age of onset of illness, age of the child, community and type of cyanotic congenital heart disease but was not found to be statistically significant. On probing, 31(67%) mothers said that they intentionally chose blue to camouflage the cyanosis to prevent any social stigma and allow equal treatment of their children. They felt that after wearing shades of blue the cyanosis was less obvious. Remaining 15(33%) mothers said it was just a coincidence.

### Conclusion

Although there have been studies relating colour of clothes and illness [1,2] (yellow with autism, blue and schizophrenia), no previous studies similar to our observation have been published. We have found a significant preference of blue in congenital heart disease patients. It is a unique finding which makes us aware of the social stigma chronic diseases carry with them. These chronic diseases like congenital heart diseases not only have a physical impact on the patient but also an emotional and mental impact on the family. This warrants us to address these issues appropriately and early. However this is difficult unless the deep rooted social stigma associated with chronic illness changes.

Table 1

Distribution of the cases depending on the colour of clothes in both groups.

	Cyanotic heart disease [n (%)]	Other illnesses [n(%)]
Wearing blue clothes	46(66%)	29(41%)
Not wearing blue clothes	24(34%)	41(59%)

## Declaration of Competing Interest

None.

## References

- [1] Beall AT, Tracy JL. Women are more likely to wear red or pink at peak fertility. *Psychol Sci* 2013;24:1837–41.

- [2] Krenn B. The effect of uniform color on judging athletes aggressiveness, fairness, and chance of winning. *J Sport Exercise Psychol* 2015;37(2):207–12. <https://doi.org/10.1123/jsep.2014-0274>.

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