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Moderation of eco-friendly trends in Indian festival; Holi

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ABSTRACT

Holi is a festival of colors, fun, joy and harmony. It is celebrated by throwing scented colors, powders and perfume at each other. In ancient time Colors for Holi were prepared from the various parts of trees such as flowers, leaves, fruits etc. Some of them are Indian coral tree (Parijat), flame of forest (Kesu), marigold, turmeric (Haladi), henna (Mahandi), and beetroot etc. In modern time, with the arrival of dry chemical colors, people stopped taking pence for extracting the flowers colors and the use of chemical colors in Holi is increasing day by day. These chemical colors are not only extremely dangerous to skin but also are hazardous for environment. To imagine after a game of Holi, one's skin brings to glow and his/her hair get an added bounce or luster. The objective of present study is to enhance awareness amongst people about the various dangerous as well as harmful effects of chemical colors and importance of natural and eco-friendly colors. Also to make aware the people with some common tips for a safe Holi and methods of preparation of natural & eco-friendly colors and de-pollute Holi and make it in sync with nature.

Key words: Holi, Chemical colors, Natural colors, Eco-friendly

INTRODUCTION

Holi is a religious spring festival celebrated by Hindus. It is primarily observed in India, Bangladesh, Pakistan, Nepal, and countries with large Indic diaspora populations following Hinduism, such as Suriname, Malaysia, Guyana, South Africa, Trinidad, United Kingdom, United States, Mauritius, and Fiji. It is also known as Festival of Colours, or as Dolajāta in Orissa and Dol Jatra in Bengali and Basantotsav in West Bengal. The main day of Holi celebration is also known as Dhulhandi or Dulhendi. Generally this festival is common for Indians. It is celebrated at the beginning of the new season, spring. Holi is celebrated at the end of the winter season on the last full moon day of the lunar month Phalguna (February/March), (Phalgun Purnima), which usually falls in the later part of February or March. Originally it is a festival of that commemorates good harvest and the fertile land. It also has a religious purpose, commemorating events in Hindu mythology. In most areas, Holi lasts about two days. Holi lowers (but does not remove completely) the strictness of social norms, which includes gaps between age, gender, status, and caste. Together, the rich and poor, women and men, enjoy each other's presence on this joyous day. No one expects polite behavior; as a result, the atmosphere is filled with excitement, fun and joy.

As the spring-blossoming trees that once supplied the colors used to celebrate Holi have become rarer, chemically produced industrial dyes have been used to take their place in almost all of urban India. In 2001, a fact sheet was published by the groups Toxics link and Vatavaran based in Delhi on the chemical dyes used in the festival. They found safety issues with all three forms in which the Holi colors are produced: pastes, dry colors and water colors.

Their investigation found some toxic chemicals with some potentially severe health impacts. The black powders were found to contain lead oxide which can result in renal failure. The Prussian blue used in the blue powder has been associated with contact dermatitis, while the copper sulphate in the green has been documented to cause eye allergies, puffiness of the eyes, or temporary blindness

The colorant used in the dry colors, also called gulals, was found to be toxic, with heavy metals causing asthma, skin diseases and temporary blindness. Both of the commonly used bases, asbestos or silica is associated with health issues. Lack of control over the quality and content of these colors is a problem, as they are frequently sold by vendors who do not know their origin.

An alleged environmental issue related to the celebration of Holi is the traditional *Holika Dahan* bonfire, which is believed to contribute to deforestation. A local tabloid had a view published that 30,000 bonfires each burning approximately 100 kg of wood are lit in one season.

1. OBJECTIVES:

- 1.1. Chemical colors
- 1.2. Harmful chemicals in colors & their effects on health
- 1.3. Natural & eco-friendly colors
- 1.4. Methods of preparation of Natural & Eco-friendly colors
- 1.5. Common tips for a safe Holi

2.1. Chemical Colors: In modern time we use chemical colors to celebrate Holi. It may be noted that chemical colors came into vogue as they were earlier thought to be harmless. Beside it being convenient and its low cost against the natural colors was the charm for changing this option. Now a day's manufacturers mix harmful chemicals in colors and play with the health of the consumers for the sake of profit. The chemicals added by them are so injurious that if unfortunately they enter a human body they may cause fatal infections. These days, most common colors available in the market are oxidized metals or industrial dyes mixed with engine oil. These chemicals can cause serious harm to human health as well as environment.

2.2. Harmful Chemicals in Colors & Their Effects on Health: Chemical colors available in the market are oxidized metals and harmful dyes. **Table- 1** is given to analyses the chemicals present in colors and their effects on health.

Table – 1: Harmful Chemicals in Colors & Their Effects on Health

S. No.	Color	Chemical	Health Effects
1.	Green	Copper sulphate (CuSO_4)	Eye allergy, temporary blindness
2.	Silver	Aluminum bromide (Al_2Br_6)	Carcinogenic
3.	Black	Lead oxide (PbO)	Renal failure and learning disability
4.	Purple	Chromium iodide (CrI_2)	Bronchial asthma & other forms of allergy
5.	Red	Mercury sulphide (HgS)	Skin cancer and Minamata disease
6.	Blue	Prussian blue [$\text{Fe}_7(\text{CN})_{18}$]	Contact dermatitis
7.	Shiny	Powdered Glass	Skin problems, eye infections & allergy

2.3. Natural and Eco-Friendly Colors: Ancient India was fully aware of the benefits of the fragrant natural & eco-friendly colors for our skin and health and also there therapeutic value. The ingredients of Gulal were purposely chosen for their emollient qualities. In Vrindavan, Holi is still played with actual flower petals chosen for their fragrance and colors such as rajnigandha, rose, marigold, jasmine etc. By using these safe, natural & eco-friendly colors we can help to save our environment and conserve our biodiversity. It is to be noted that Holi can become more soothing after play with natural and eco-friendly colors. As natural colors are obtained from skin friendly sources such as turmeric (Haladi), flower extracts, sandal wood powder, mehndi (Henna) etc.

MATERIALS AND METHODS

2.4. Methods of Preparation of Natural & Eco-Friendly Colors: Generally Indians are aware of the use of natural & eco-friendly colors but due to changing attitude and changing life style, our priority are totally mismatched with the concept of natural & eco-friendly colors. Yet environmentally it is again the demand of time that we have to take U-turn for these methods. Here some old methods for preparing natural & eco-friendly colors are described in **Table – 2**.

Table – 2: Methods of Preparation of Natural & Eco-Friendly Colors

S. No.	Color	Sources	Method of Preparation
1.	Yellow powder	Turmeric powder (Haldi), Chick Pea flour (Besan)	By mixing turmeric powder with besan
2.	Yellow liquid	Flowers Marigold & Tesu	By boiling marigold and tesu flowers in water
3.	Deep Pink	Beetroot	By soak of slice of beetroot in water
4.	Orange-Red	Dry Henna leaves	By mixing dry henna leaves powder with water
5.	Fragrant water	Flower petals	By soak of flower petals (rose, rajnigandha, marigold, jasmine etc.) in water overnight or by boiling flower petals in water

2.5. Common Tips for a Safe Holi: Due to worldwide awareness of side effects generated from chemical colors, some researchers proposed following tips to enjoy a joyous Holi. Here it is must to define it in this article.

- By avoiding the use of chemical colors.
- By using natural & eco-friendly colors.
- Oil hair well; it will make it easy to get rid of the color stuck in the hairs. Also it will limit the effect of chemicals to hairs and skin.
- Keep lips tightly locked so that colors do not enter in mouth.
- Do not run and jump on wet floors as you may slip and pose the danger of bone fracture.
- During travel, keep the window of your car/bus/train tightly closed.
- Try to avoid going outside of your premises in the peak hours of the festival.
- Keep anti-oxidants and other anti-allergic medicines ready for any accident or if you encounter any skin problem.
- If you are asthmatic, take preventive doses in advance and keep S.O.S. inhalers handy. For such people, it is best to avoid playing Holi, if possible.
- Avoid drinking of bhang (Cannabis indica) and alcohol during festival.
- Take a bath with Luke warm water after the Holi celebration is over.

3. MATERIALS AND RESEARCH METHODOLOGY:

As there are several resources of natural and eco-friendly colors which can be used in Holi. Here I am going to define these natural colors as the material used for my analysis.

This paper is based on primary and secondary data. The data have been quantified in the light of define objectives. For the research we have taken age as a variable for measuring the effects of chemical colors and divided the group into different age groups.

Age group A₁: It includes members of the age of 10-20 years old.

Age group A₂: It includes members of age of 21-30 years old.

Age group A₃: It includes members of age of 31-40 years old.

Age group A₄: It includes members of age of 41-50 years old.

Age group A₅: It includes members of age more than 50 years.

We have adopted convenience sampling and the sample size is 100 for each age group from Pilkhuwa, Ghaziabad Utter Pradesh India.

RESULTS AND DISCUSSION

Table-1 shows the harmful chemicals present in chemical colors and their impacts on Human body.

Table-2 shows the methods of preparation of natural and eco-friendly colors.

Table-3 and Fig-1 shows the groups and analysis of the different age group samples.

- **Age group A₁** used chemical colors to celebrate Holi is 80%, **Age group A₂** used chemical colors to celebrate Holi is 55%, **Age group A₃** used chemical colors to celebrate Holi is 35%, **Age group A₄** used chemical colors to celebrate Holi is 15% and **Age group A₅** used chemical colors to celebrate Holi is 5%. So the use of chemical colors in celebrating Holi decreases with the increase in age.

• **Age group A₁** aware about harmful effects of chemical colors on human body 25%, **Age group A₂** aware about harmful effects of chemical colors on human body 58%, **Age group A₃** aware about harmful effects of chemical colors on human body 65%, **Age group A₄** aware about harmful effects of chemical colors on human body 80% and **Age group A₅** aware about harmful effects of chemical colors on human body 90%. So the awareness about harmful effects of chemical colors increases with the increase in age.

• **Age group A₁** aware about natural and eco-friendly colors 22%, **Age group A₂** aware about natural and eco-friendly colors 50%, **Age group A₃** aware about natural and eco-friendly colors 68%, **Age group A₄** aware about natural and eco-friendly colors 80% and **Age group A₅** aware about natural and eco-friendly colors 85%. So awareness about natural and eco-friendly colors increases with the increase in age.

The probability of using natural colors, if people become aware about the benefits of natural colors increases with the increase in age. It is 27% in **Age group A₁**, 60% in **Age group A₂**, 70% in **Age group A₃**, 85% in **Age group A₄** and 95% in **Age group A₅**.

Table – 3: Analysis of different age groups

Age groups	A ₁	A ₂	A ₃	A ₄	A ₅
Age in years	10-20	21-30	31-40	41-50	More then 50
Used chemical colors to celebrate Holi	80%	55%	35%	15%	5%
Awareness of harmful effects of chemical colors on human body	25%	58%	65%	80%	90%
Awareness of natural colors	22%	50%	68%	80%	85%
Probability of use of natural colors, if people becomes aware of benefits of natural colors	27%	60%	70%	85%	95%

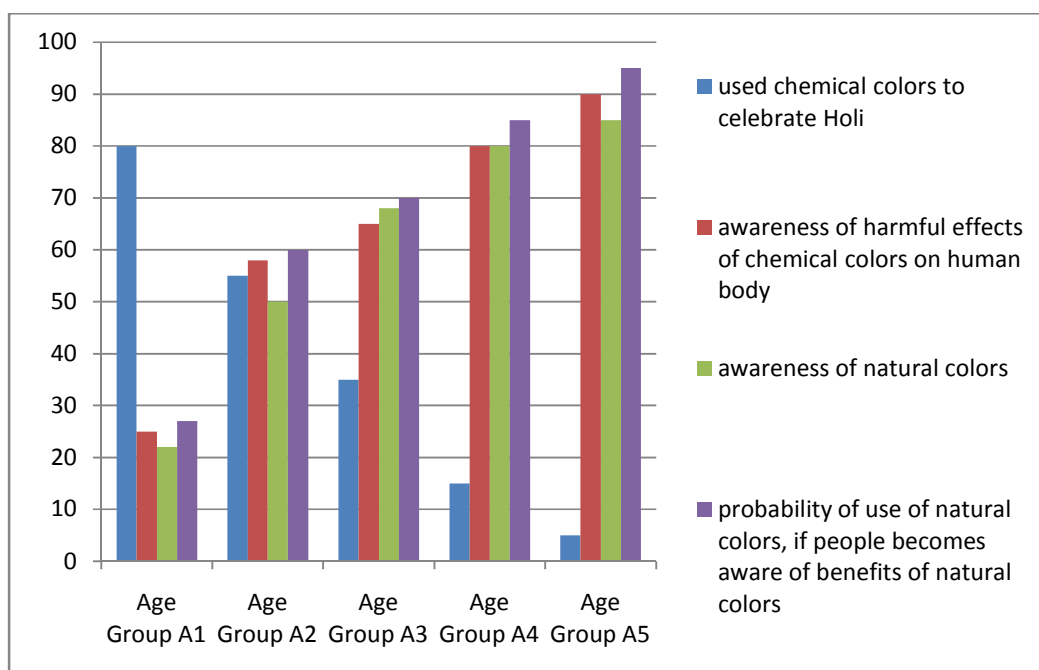


Fig- 1 (Use of chemical colors, their harmful effects, awareness and probability of using natural colors)

CONCLUSION

Holi, a great festival organized by Hindu culture aims to enjoy nature along with the natural way. It makes us crazy like a child, and resultant we come close to nature. But now a days the chemical colors has been diverted this natural instinct of the fest. Its result are irritating and makes this fest less charming, this is why many of us, don't welcome it. Through this paper, I just want to recover the healthy point of view for Holi. By advocacy of natural and eco-friendly colors, only a little effort to gain its (Holi) eco-friendly approach is done.

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