ISSN 2454-8596
www.vidhyayanaejournal.org
An International Multidisciplinary Research e-Journal

Skin Diseases Due to the Affection of Various Dyes Among the Workers of Dyeing Industries in Jetpur, Gujarat, India

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ISSN 2454-8596
www.vidhyayanaejournal.org
VIDHYAYANA
An International Multidisciplinary Research e-Journal

ABSTRACT

Jetpur is a very famous semi-urban city for dyeing industry. It is one of the rapidly growing sectors of Jetpur's financial system as it provides employment to a large number of people. The workers working in this sector get exposed to a large number of chemicals and become the victims of different types of diseases and health problems. Due to the affection of dyes the workers suffer from the various diseases. The respiratory and skin diseases are the major ones. Besides these, they also suffer from indigestion, acidity, ulcer, constipation etc. During the printing of sarees and material and dyeing process, they have to work with heavy tools thus they also have muscular disease. In the present paper, the researcher has focused only on skin disease due to the affection of dyes. The objective of this study is to know which dye is more harmful and responsible for such diseases.

Key Words: Dyeing, Skin Diseases, Dye

Introduction:

The industrialization is necessary for prosperity and at times for the survival of a nation. The production is the real wealth of a nation. Only industrialization is not enough, real benefit is brought by continuous top performance of the worker which is only possible by their good health. Industrial workers constitute only a segment of general population and the factors that influence the health of the population also apply equally to industrial workers. Occupational health is undoubtedly an issue that calls for more research by experts and activists. Respiratory and skin problems are the major health threats to Dyeing Workers.

Occupation and Health:

Occupational hazards are often encountered in industry, agriculture, mining and other working environments. The major categories of environmental stress for the worker are chemical agents; physical agents and conditions; biological agents and conditions; and psychosocial factors. These may act either singly or in combination. Occupational accidents result from the joint action of both environmental and human factors, and are therefore dealt with separately.

The interaction between man and his working environment may lead to betterment of health, when work is fully adapted to human needs and factors, or to ill health, if work stresses are beyond human tolerance. Occupational diseases and injuries result from specific exposures at work. In addition, work exposures may aggravate certain illnesses or be a factor of varying importance in causing diseases of multiple etiologies.

India is the fourth major country consuming textile raw material after China, Russia and USA, according to International Advisory Cotton Committee (1977) Industrialization is necessary for prosperity and at times for the survival of a nation. The production is the real wealth of a nation. Only industrialization is not enough, real benefit is brought by continuous top performance of the workers which is only possible by their good health.

Industrial workers constitute only a segment of general population and the factors that influence the health of the population also apply equally to industrial workers i.e. water supply, sewage and waste disposal, nutrition and education, and the conditions prevailing in their place of work. Occupational environment is the sum of external condition and influences which prevail at the place of work and which have a bearing on the health of the working population. The industrial workers today are placed in a highly complicated environment which is getting more complicated as man is becoming more ingenious. The textile industry in India contributes to the national economy in several ways and provides employment to the rural, poor and the economically backward sections of the society. It is not a commodity. It is a piece of art.

Occupational hazards are dangers to human health and wellbeing which are associated with specific occupations. While efforts are made to reduce hazards, these hazards remain present in the workplace by nature of the profession. For a telephone lineperson, for example, falls from height are an occupational hazard because members of telephone crews need to work at heights to do their work. Recognizing occupational hazards is the first step in working on risk reduction programs for the workplace to keep work as safe and healthy as possible.

Materials and Methods:

Study Area:

Jetpur is a hub of dyeing factory where Sarees are printed. It was found that the population of dyeing workers was more in Jetpur taluka of Gujarat. In addition to this, the researcher being a resident of jetpur

since last many years is familiar with the environment and people of Jetpur taluka, therefore a sample of 300 workers who worked as dyeing workers in Jetpur taluka was selected as the sample for the present study.

Study Group:

This paper is aimed to observe the food habits and its effect on nutritional status among the dyeing workers of Jetpur Taluka. Thus, the researcher has selected dyeing workers of different ages. A fixed number of workers were selected form each age group. No females are working in Dyeing industry, so all selected workers are male only. The random sampling technique was used to draw out the desired sample from the selected areas. The age group considered for this sample was as follows.

(1) 18 to 25 years

(2) 26 to 35 years

(3) 35 to 50 years

(4) Above 50 years

Content for the Interview Schedule:

First of all, the researcher has prepared a list of questions to be asked on the basis of review of literature and preliminary study. All important aspects were covered in this interview. All questions were further divided into following categories.

1. **Personal information:** The personal information about the workers such as, their name, age, sex, education, religion, size of family, occupation, experience etc. have been included.
2. **Health Awareness Information**: The second section involved information about health awareness such as first aid facility, health check-up by doctor, health centre facility, R. O. System facility, types of addiction, the working condition etc.

3. **Physiological Problems:** The third section of interview consisted of physiological problems such as respiratory system, muscular skeletal disorders, skin diseases, ear problems, heart diseases due to use of different dyes, pain in the body parts etc.

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Skin Analysis

1. Burning Skin

Types of Dyes	Frequency		Percentage	
	Yes	No	Yes	No
RACTV	111	189	37	63
RMZL	81	219	27	73
DRCT	93	207	31	69
DSPRS	22	278	7.3	92.7
PRSN	31	269	10.3	89.7
RAPID	91	209	30.3	69.7
VAT	28	272	9.3	90.7

2. Red Patching

Types of Dyes	Frequency		Percentage	
	Yes	No	Yes	No
RACTV	96	204	32	68
RMZL	80	220	26.7	73.3
DRCT	89	211	29.7	70.3
DSPRS	20	280	6.7	93.3
PRSN	14	286	4.7	95.3
RAPID	46	254	15.3	84.7
VAT	19	281	6.3	94.7

ISSN 2454-8596
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3. Itching Sensation

Types of Dyes	Frequency		Percentage	
	Yes	No	Yes	No
RACTV	88	212	29.3	70.7
RMZL	65	235	21.7	78.3
DRCT	63	237	21	79
DSPRS	26	274	8.7	91.3
PRSN	58	242	19.3	80.7
RAPID	59	241	19.7	80.3
VAT	33	267	11	89

4. Skin Irritation

Types of Dyes	Frequency		Percentage	
	Yes	No	Yes	No
RACTV	31	269	10.3	89.6
RMZL	98	202	32.6	67.3
DRCT	11	289	3.6	96.3
DSPRS	11	289	3.6	96.3
PRSN	81	219	27	73
RAPID	65	235	21.7	78.3
VAT	17	283	5.7	94.3

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5. Allergy

Types of Dyes	Frequency		Percentage	
	Yes	No	Yes	No
RACTV	92	208	22.7	77.3
RMZL	68	232	22.7	77.3
DRCT	83	217	27.7	72.3
DSPRS	17	283	5.7	94.3
PRSN	40	260	13.3	86.7
RAPID	77	223	25.7	74.3
VAT	30	270	10	90

6. Skin Boil

Types of Dyes	Frequency		Percentage	
	Yes	No	Yes	No
RACTV	31	269	10.3	89.7
RMZL	11	289	3.7	96.3
DRCT	30	270	10	90
DSPRS	2	298	.7	99.3
PRSN	25	275	8.3	91.7
RAPID	28	272	9.3	90.7
VAT	0	100	0	100

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7. Abscess

Types of Dyes	Frequency		Percentage	
	Yes	No	Yes	No
RACTV	12	288	4	96
RMZL	5	295	1.3	98.7
DRCT	11	289	3.7	96.7
DSPRS	7	293	2.3	97.7
PRSN	0	300	0	100
RAPID	9	291	3	97
VAT	0	300	0	100

8. Ring Warm

Types of Dyes	Frequency		Percentage	
	Yes	No	Yes	No
RACTV	24	276	8	92
RMZL	10	290	3.3	96.7
DRCT	17	283	5.7	94.3
DSPRS	2	298	.7	99.3
PRSN	5	295	1.7	98.3
RAPID	8	292	2.7	97.3
VAT	0	300	0	100

ISSN 2454-8596
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9. Dermatitis

Types of Dyes	Frequency		Percentage	
	Yes	No	Yes	No
RACTV	40	260	13.3	84.7
RMZL	14	286	4.7	95.3
DRCT	14	286	4.7	95.3
DSPRS	7	293	2.3	97.7
PRSN	25	275	8.3	91.7
RAPID	43	257	14.3	85.7
VAT	5	395	1.7	98.3

Age Wise Analysis

Sr. No.	Types of Dyes	Age	N	Mean	Std. Deviation	t value
1	**Burning Skin**	18-35	137	4.1825	3.2814	1.924
		Above 35	163	4.8957	3.1261	
2	**Red Patching**	18-35	137	3.700	1.3249	.740
		Above 35	163	3.589	1.2849	
3	**Itching Sensation**	18-35	137	4.204	1.7621	2.778**
		Above 35	163	3.681	1.5018	
4	**Skin Irritation**	18-35	137	3.985	1.823	1.229
		Above 35	163	3.754	1.427	
5	**Allergy**	18-35	137	4.554	1.8227	4.769**
		Above 35	163	3.662	1.4151	
6	**Skin Boil**	18-35	137	1.182	1.5157	.867
		Above 35	163	1.343	1.6717	
7	**Abscess**	18-35	137	.416	1.1024	.348
		Above 35	163	.460	1.0843	
8	**Ring Warm**	18-35	137	.5036	1.1827	1.966*
		Above 35	163	.7914	1.3261	
9	**Dermatitis**	18-35	137	1.4891	1.5909	.091
		Above 35	163	1.4724	1.5765	

ISSN 2454-8596
www.vidhyayanaejournal.org
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Experience Analysis

Sr. No.	Types of Dyes	Opinion	N	Mean	Std. Deviation	t value
1	**Burning Skin**	Yes	85	4.4471	3.4502	.416
		No	215	4.6186	3.1196	
2	**Red Patching**	Yes	85	3.8118	1.340	1.439
		No	215	3.5721	1.283	
3	**Itching Sensation**	Yes	85	4.0235	1.8255	.685
		No	215	3.879	1.5690	
4	**Skin Irritation**	Yes	85	3.847	1.829	.087
		No	215	3.865	1.536	
5	**Allergy**	Yes	85	4.482	1.708	2.715**
		No	215	3.907	1.632	
6	**Skin Boil**	Yes	85	1.235	1.4852	.236
		No	215	1.283	1.6486	
7	**Abscess**	Yes	85	.458	1.0862	.188
		No	215	.432	1.0953	
8	**Ring Warm**	Yes	85	.705	1.3612	.354
		No	215	.641	1.233	
9	**Dermatitis**	Yes	85	1.517	1.644	.259
		No	215	1.465	1.558	

Result and Discussion:

The data shows that the dyeing workers suffer from various types of skin diseases such as, burning skin, red patching, itching sensation, skin irritation, allergy, skin boil, abscess, ring warm, dermatitis etc. The burning skin disease occurs due to RACTV dye. Total 37% workers suffer from this burning skin. The skin irritation occurs due to RMZL dye. Total 32.6% workers suffer from skin irritation problem. Over all, it is observed that RACTV dye is more dangerous for health as the maximum skin problems have arisen due to that. If it is observed that the majority of workers suffering from skin diseases belong to age group 18-35.

Conclusion:

Thus, it can be concluded that the workers in dyeing industry of Jetpur are exposed to various skin problems due to poor working conditions and lack of awareness among the workers. There must be established policies to look after this issue. Some protective equipment must be provided, e.g., face masks and first-aid facilities to protect workers from the adverse effect of environment.

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