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Food Pattern and its Effect on Nutritional Status Among the Workers of Dyeing Industries in Jetpur, Gujarat, India

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ABSTRACT

There are many dyeing workers across the globe today who are suffering from severe, moderate and mild malnutrition and other diseases. Among many influencing factors, the profession or an occupation of an individual also plays a significant role on their health. The living style, daily routine, preferences, value systems as well as food habits of an individual may be influenced because of his or her occupation. Thus, while studying nutrition and aspect of health, its correlation is very essential. One such occupation is dyeing work, which leads to various problems at various stages. In Rajkot District Jetpur is an area where dyeing industry is the chief occupation. Large number of workers are involved in this industry. They work for a longer period which may affect their nutrition and health. The prime objective of this paper is to study the energy balance of these workers on the basis of nutritional food and calory calculation.

Key Words: Dyeing, Nutrition, Nutrients, Food Habits, Energy Balance

Introduction:

According to Sangeeta Karnin,



“Nutrition is the science of food values. Nutrition is defined as food at work in the body. In a broader sense nutrition is defined as the combination of process by which the living organism, receives and utilizes the materials necessary for the maintenance of its functions and for the growth and renewal of its components.” (1-3)

WHO gives the following definition of the nutrition:

“Nutrition is the intake of food, considered in relation to the body’s dietary needs. Good nutrition, an adequate, well balanced diet combined with regular physical activity is a corner stone of good health. Poor nutrition can lead to reduced immunity; increased susceptibility of disease, impaired physical and mental development and reduced productivity.” (Sept., 2014)

Definition of Nutrients:

Sangeeta Karnin gives the following definition of nutrients in her book entitled “Nutrition and Diet Therapy”:



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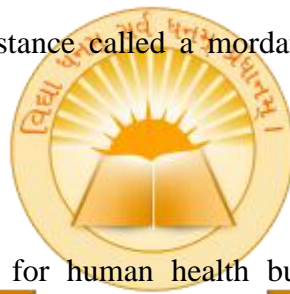
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“Nutrients are defined as the constituents of food which help us to maintain our body functions, to grow and to protect our organs. There are six major nutrients in our body. They are carbohydrates, proteins, lipids vitamins and minerals. The human body requires 17 vitamins and 24 mineral elements for various day-to-day activities. The benefits of good nutrition are health, efficiency and longevity.” (1-3)

What is meant by ‘Dyeing’?

A dye is the material used for colouring cloth or fabric. As mentioned in Wikipedia, “The process of colouring cloth or fabric with dye is called dyeing.” It is possible to colour textile materials in various ways including staining and painting, but dyeing involves a penetration of the fibre by the dye stuff and some degree of combination of the acid/base type. Whereas the dyeing of vegetable fibre depends on secondary forces between the dye and cellulose (substance forming framework of plants) Dyeing, therefore, implies some affinity between the fibre and the dye and the dyestuff which possess this affinity are termed substantive; some dyes have no affinity for some fibres and are removed completely by rinsing, others require the intervention of a second substance called a mordant, for which both dye and fibre have an affinity, although not for one another.



Importance of Good Nutrition:

Good nutrition is vital not only for human health but also for national economic and social development an adequate and balanced diet is the best way to ensure proper nutrition.

The adequate nutrition is a major need of people and is closely linked to food intake and its nutritional quality. However, it is not obvious that people’s needs for a disease prevention and health promoting diet are taken into consideration. The RIF, right to adequate food, is focusing on adequate food as a human right showing clearly that people’s need should be met first and foremost. There are however various factors that may have an impact on people. (Joseph, Kungu)

The livelihood such as, various contextual factors, education, gender etc. plays a major role. The livelihood of each individual plays out in local communities where people are living, however, local community are part of larger communities with its law, rules and regulations there will differ somewhat depending on the context that people are living in.

Universal Declaration of Human Rights (UDHR) states that everyone has a right to a standard living adequate for health and of his family including food, clothing, housing, and medical care and necessary



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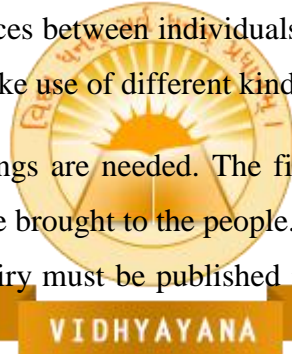
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social services and the right security in the event of unemployment, sickness, disability, old age or other lack of livelihood in circumstances beyond his control.

The half the earning of wage workers in this country and Europe is spent for food. The health and strength of all are intimately dependent upon their diet, yet most people understand very little about what their food contains, how it nourishes them, whether they are economical or wasteful in buying and preparing it for use and whether or not the food they eat is rightly fitted to the demands of their bodies. The result of this ignorance is great waste in the purchase and use of food, loss of money and injury to health.

The reason for this ignorance is simple enough. Fifty years ago no men knew that what our bodies of the food served there purposes in nutrition, how much of each of the ingredients was needed to supply the demands of people of different age, sex and occupation and how best of user, we do not today know as much about these things as ought for that matter. We never shall be able to lay down hard and fast rules to apply to all cases. Because of the differences between individuals in respect to their demands for nutriment and the ways in which their bodies can make use of different kinds of food.

To remove this ignorance two things are needed. The first is a more definite knowledge of actual facts. The second is that the information be brought to the people. The knowledge can be gained by research. To secure its diffusion the results of inquiry must be published in detail; they can then be popularised and made useful to the people at large



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Nutrition plays a very important role in the development of human resource. Human resources are one of the strengths of any stronger nation. A healthy population can lead the nation better. Therefore, in all the availability of food dietary guidelines is formulated.

Understanding the Condition of Jetpur:

Jetpur is a city in the Rajkot district of the Western state of India, Gujarat. It is a medium size city, 72 kms. far from Rajkot. It is situated on the Western Bank of the Bhadar River in Gujarat State. Primarily, Jetpur is a textile city famous for its cotton saree industries. It is one of the largest places in the country for screen-printing, block printing and yarn dyeing workshops in the country.

There are near about 2,000 dyeing units which come under the small-scale sector. Most of the units do their business on job work basis. It is compulsory for each and every unit to obtain water pollution consent letter.



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It is the basic need for commencing the business. Most of the units of the Dyeing and Printing Industry of Jetpur city are registered either as sole proprietorship or as partnership firm. During the golden years of the industry, Jetpur was known as “The Little Dubai” of Saurashtra. Jetpur is very famous for its cotton sarees all over the world. But then the industry had to face the closure for two times due to several critical situations and there was a great fall in the demand of cotton sarees. The entrepreneurs of the industry successfully faced these problems and expanded their business in 9 countries of the Africa by adopting new technology. Jetpur, once a dyeing and print processing hub in Gujarat, has been facing various problems over the last few years. Pollution related issues, dynamics of fashion in textile trade, the shortage of raw materials hit the textile industry of Jetpur.

The units in Jetpur are mainly engaged in printing textiles and presently procuring raw material from ginning units located in the surrounding areas such as Manavadar, Gondal and Shapar Veraval. Process orders from the business circuits of Kolkata and Mumbai. None of the units in Jetpur are technically equipped for manufacturing finished textiles goods, as majority of business establishments in the city works on a traditional platform and secondly availing raw-material is difficult. With the textiles apparel park shaping up near Jetpur, the business turnover and employment opportunities are likely to double in the region. The business volume of entire trade ranged between Rs. 85 crore and Rs. 100 crore per annum housing 20,000 employees, which was likely to double with 100 new units shaping-up. There would be need of additional 20,000 people from this area, as there would be a huge demand of manpower having expertise in the textile sector and secondly, turnover is also likely to scale somewhere between Rs 190 crore and Rs 200 crore per annum as per the opinion given by one of the experts in this field. Khanga’ & ‘Kitanga’ style of cotton dressing code mainly used in the African sub-continent was processed at Jetpur and exported to African countries, Jetpur alone contributes to 80 per cent of the requirement of Khanga-Kitanga segment till 2001, but as cheap Chinese products entered the market Jetpur’s contribution fell to 40 percent.

Jetpur’s foreign trade has also suffered in the last few years and hence it has become necessary to find new avenues for surviving, A single saree processed and priced between Rs 20 and Rs 40 per piece. As a result, business volumes are high but profit margins are extremely low. Hence, doubling the capacity or probably diversifying business in similar trade is the only way out for the industry. Farmers faced initial road blocks in procuring land owing to pollution issues in the past. Dye-printing units have polluted the land to such an extent, that precipitations of the hard-coloured water have got deposited on the land and nearby areas. Water levels have depleted as the land is choked with precipitations, which even affects the fertility of the soil, As the agriculture belt in this region produces groundnuts and cotton in abundance, probability of



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losses in livelihood was not acceptable by the farmers.

The Factors Influencing the Food Pattern:

The factors that determine individual food habits are varied and complex. They can be divided into four major categories.

1) Cultural Factors:

Culture may be defined as the way a group of people think and behave. Anderson (1982) opines that one culture may consider food only as a means of Satisfying hunger; another may feel eating is a means of family or social sharing. Culture is transmitted from one generation to another by institutions such as Family, school and other religious institutes. The preservation of individual cultures is an important goal of many minority groups.

2) Economic Factors:

Poverty is one of the most responsible factors for underfeeding and Malnutrition. Passmore in 1982 reports that poverty in general is not deficiency or insufficiency of acceptable material needs of the people. The environment of poverty is conditioned by malnutrition which increases vulnerability to disease as well as reduces learning capacity, mental development, physical growth, productivity the span of working years; all of which significantly influences the economic potential of men and women. Poverty results in lack of education, which in turn increases ignorance and reduces the scope of self-improvement. It also affects the norms and value system. Illiteracy and fertility is a viscous combination and peer housing with lack of amenities and physical environment results in high incidence of mental and physical deficiency. At last, poor health also reduces the ability to absorb food. In this context Mitchell (1982) opines that rising cost of food and food shortage has had their impact on the food patterns of many families. Increased prices make the selection of food for the family a real challenge.

3) Psychological Factors:

Food habits are an important part of human behaviour. Individuals are motivated to it in terms of what they perceive as being relevant to meet their needs. They may consider a food item to be tasty and thus prefer it whenever possible. Some people also associate prestige value with various foods. They may select food items, which according to them are prestigious to consume. Because of these factors the food choices



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of any two economically or physically similar individuals is not same.

4) Social Factors:

If one recognizes that individuals belong to various social groups, the effect of group behaviour cannot be overlooked, when considering the factors that influence food habits. The organization of society with its many structures and accompanying of society systems plays an important role in the acceptance or rejections of food patterns. The effect of religious customs on food habits may be important on many communities. Celebrations may be done either by feast or fast. Many families also practice traditions of eating particular foods, prepared in specific manner. Some religions prohibit their followers to consume particular food items. Thus, religion also influences what one eats.

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



Food Frequency Survey:

For this survey food frequency questionnaire was used. FFQ is a limited check list of foods and beverages with a frequency response section for subjects to report how often each item was consumed over a specified period of time. FFQ are dietary assessment tool widely used in epidemiological studies. Investigating the relationship between dietary intake and disease or risk factors. The three main components if these questionnaires were the list of foods, frequency of consumption and the portion size consumed. This was semi quantitative FFQS but the researcher used the non-quantitative FFQS and collected only frequency information and no portion size information. The food list reflects the food habits of the study population at the time the data is calculated. The frequency of consumption may be asked by open-ended questions or by presenting frequency categories.

TABLE-1
DISTRIBUTION OF THE WORKERS ACCORDING TO PULSES AND OTHER FOOD THEY EAT



Sr No.	Name of the Food	Occasionally	Once in a Day	Once in a Week	Once in a Month	Twice or Thrice in a Month
1	Dal	---	200	---	---	---
2	Pulses	32	17	47	10	75
3	Soyabean	14	---	---	---	---



TABLE-2

**DISTRIBUTION OF THE WORKERS ACCORDING TO ROTI AND OTHER SUCH ITEMS
THEY EAT**

Sr No.	Name of the Food	Occasionally	Once in a Day	Once in a Week	Once in a Month	Twice or Thrice in a Month
1	Roti	---	197	---	---	---
2	Puri	55	35	---	---	49
3	Paratha/Nan/Thepla	23	---	05	18	15
4	Rotla	69	47	35	103	18
5	Stuff Paratha	---	---	---	---	---

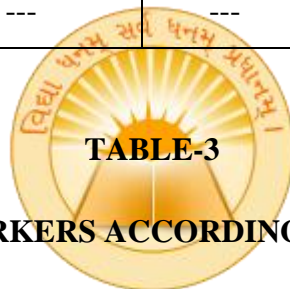


TABLE-3

DISTRIBUTION OF THE WORKERS ACCORDING TO DRY SNACKS THEY EAT

Sr No.	Name of the Food	Occasionally	Once in a Day	Once in a Week	Once in a Month	Twice or Thrice in a Month
1	Sev Mamra, Chevdo, Chavanu	57	---	27	166	28
2	Gathiya	155	---	58	56	23
3	Shakkar Para, Farsi Puri	---	---	---	10	---
4	Mung Dal, Chana Dal, (Fried)	13	---	---	---	---
5	Potato & Banana wafer	86	---	21	66	28

**Usual Daily Intake:**

The process of collection is similar to that of 24-hour recall. The workers were asked a series of open-ended questions to elicit what he or she usually eats throughout the day, starting with breakfast, lunch, dinner etc. The consistent nature of most people's eating habits makes this method measurable for an estimate of usual intake.

TABLE-4

MEAN OF ONE DAILY NUTRITIONAL FOOD AND CALORY CALCULATION OF DYEING WORKERS OF JETPUR TALUKA

Age Group	Morning Tea & Breakfast	Lunch	Evening Breakfast	Dinner	Total 2800 Calory
18-25 (N=78)	499.97	699.51	494.60	698.29	2788.9
26-35 (N=134)	479.31	679.31	487.85	686.02	2712.19
36-50 (N=67)	456.97	669.51	467.25	651.84	2608.7
Above 50 years (N=21)	436.90	647.29	405.33	670.14	2495.76

Result and Discussion:

The data shows that 65.66% workers eat Roti every day, 15.66% workers eat rotla every day. The other items such as, puri, paratha and thepla are taken occasionally by them. They do not eat stuff paratha at all. Furthermore, 66.66% workers take dal once in a day in their meal. Only 5.6 workers take pulses and soyabean is taken by few of them occasionally. As most of them work for 6 to 10 hours a day so they don't have time to cook food. Some of them have also come from other states such Bihar and UP who live alone on rent. Thus, they eat maximum dry snacks as shown in the data. 55.33% workers eat mamra and chevdo at



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least once in a month. At last in table no-4, the calculation of daily nutritional food and calory is given. They have to work very hard so they should minimum get 2800 calory from daily food but they do not get as per the requirement. Thus, the dyeing workers suffer from malnutrition.

Thus, it can be concluded from the survey that most of the workers eat foods such as, Rice and Dal, Chappati, Rotla, Khichdi, Potatoes, Dry snacks, Street food etc. They cannot afford more healthy and germinated food such as fruits, milk and milk products.

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