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Employees Health and Safety Measures in Sugar Industry: A Study With Reference to Sugar Factories in Bidar District

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ARTICLE INFO	ABSTRACT
<p>Article history</p>	<p>In present scenario Sugar Industry is playing a very important role for development of the Indian economy. Now days sugar industry has acquired great significance in India. It is a second largest agro based industry in India. The present study relates to the effectiveness of health and safety measures implemented in the sugar factories in the Bidar district. This study will be conducted within the confines of sugar factories of the Bidar district.</p>
<p>Keywords</p> <p>Effectiveness, human resource, health, safety measures</p>	<p>Human resource is a great asset in any kind of business; it is a vital and valuable resource in sugar factories. The study will highlight the impact of human resource practices adopted by the sugar factories. The organized manpower their work performance and the analysis of their opinions and attitudes towards the human resource practices are considered for the study. The proposed study is an attempt to highlight the effectiveness with respects of Health and Safety measures of sugar factories. Right from independence particularly sugar factory has vital role in the social, political and economic life. The main purpose of research is to find out the effectiveness relating to Health and Safety Measures..</p>

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Introduction

Sugar industry is the second largest industry next to textile industry in India. It is playing a very prominent role for the development of Indian economy. It is believed that India is the original home of sugarcane. Now-a-days, sugar production and consumption is expanded dramatically, so numbers of people are getting employment opportunities directly and indirectly from this sector. The most outstanding feature of the industry is its vital link between the sugar factory and the cultivators whose interests are interdependent.

Sugar industry is labour intensive industry employing highest percentage of population of the society, covering both organized and unorganized human resources. As in case with any other industry, sugar industry employs multi-skilled workers at different levels of management. It is of prime importance from the management perspective to utilize the skills of the employees in optimum manner.

It is worth mentioning that the provisions regarding **Health** under the Factory Act are contained in Section No. 11 to 20 and they govern the health of workers working in the factory. The provisions regarding the **Safety** of workers in the factory contained in Section 21 to 41 of the Factory Act. These provisions are absolute and obligatory in the character and the management of every factory is bound to follow them.

Review of Literature

1. Ramoo S.K. (2003) observes that, Karnataka sugar industries are facing crisis on account of high cost of production and the slump in the demand for sugar in the international and domestic markets.
2. Namasivayam N. (2004) points out that, sugar making in India was known as early as 3000 B.C. Gaura an old Indian word for sugar, was apparently derived from the name Gur, an ancient monarchy in Bengal. A crown made of sugar cane is described in the Atharvaveda, a sacred book of Hindus written about 800 B.C or earlier and the Greek general Nearchus, who accompanied Alexander -The Great to India in the 4th century B.C, tells of a reed that produced honey without the aid of bee. Domestic non centrifugal sugar, sugar that is made without centrifuging for home consumption, is now called Gur in India and Goela in Java.
3. Rajashree Pathy (2005) in her special article on problems and prospectus of the sugar industry, discussed about various problems of Sugar Industry. The various remedial measures to overcome problems are better utilization of ethanol as a vehicular and environmental friendly fuel, utilizing Bagasse to produce power, reservation of sugar cane area and total decontrol of sugar etc.,
4. Sanjay Awasthi and Rajesh Kumar Srivastava (2006) their article "Drying of sugar By FBD with chiller for better keeping quality" studied that hot air is not needed & using cooler air also reduces the need of dryer hopper area to cool the sugar after drying. Fluidized bed dries with chiller is best for it by which moisture is continually removed condensation is avoided during shortage & temperature of bagging, sugar remain well below 40°C.
5. Asha Thakkar, Balu Kapadnis and Vandana Dhamankar (2006) in their research article "Bio-catalytic bleaching of sugar" investigated an innovative methodology for the biodegradation of caramel molecules by enzyme catalysis which lowered down ICUMSA colour index of plantation white sugar.

Need of the Study

Extensive review of literature recognizes that all the labour legislations including the Factories Act have been enacted keeping in mind governing the principles of social justice, social equality and international informality. This has been done with review to improving the service conditions of the industrial workers and ensures the establishment of industrial peace which in term would accelerate the productive activity and bring about prosperity in the country.

There, the research study will be highly useful and also contribute to the development of the sugar

factories and its human resource management practices of Health and Safety Measures. In this way, the significance of the study is quite obvious and the scope is limited to the effectiveness of health and safety measures implemented in the sugar factories in the Bidar district.

Objectives of the Study

1. To identify environmental health and safety measure conditions in sugar factories.
2. To study implementation of Health and Safety HR measures in sugar factories.

Research Methodology

This paper is based on secondary data collected from reputed books, journals, magazines and newspapers. Facts and data collected from these sources have been supported by the observational facts by the researcher.

Limitations of the Study

1. The study is concerned with only health and safety facilities of sugar factories.
2. The present study is pursued based on the secondary data.

Human resource practices are concerned with human being employed in the organizations; it may be in private or public or cooperative sector. It deals with the process of developing people, in accordance with their aspirations and to suit the organizational needs. Human resource can be used as a means for developing other resources

in a proper manner. Therefore, human resource practices affect the overall performance of the organization and in sugar industry human resource is playing vital role. Sugar industry is playing very significant role for the development of rural area. The sugar industry is classified into two categories i.e. Private and Cooperative sugar factories.

Both the categories require trained human resource for successful functioning. The detailed research study of selected cooperative sugar factories will be an advantage to the development of human resource practices of sugar factories.

Table - 1: Human Resources of Bidar

Sl. No.	Human resources	District	% to Total	State	% to total
1	Marginal workers	34033	2.71	1594681	3.55
2	Non workers	755155	60.14	26090403	58.0
3	Cultivators	137721	10.97	5915633	13.15
4	Agricultural Laborers	212739	16.94	4999959	11.12
5	Live stock and Allied	5110	0.40	616733	1.37
6	Mining & Quarrying	2203	0.17	116369	1.26
7	Manufacturing in household Industries	6516	0.52	322151	2.72
8	Manufacture (other than household industries)	14035	1.11	1528975	3.4
9	Construction workers	6836	0.54	427972	11.95
10	Trade & Commerce	28720	2.31	1379954	3.02
11	Transport & communication	12592	1.00	454964	1.02
12	Other services	40069	3.19	1529407	3.4

Source: Economics survey of Karnataka

Sugar Industries in Bidar District

Bidar District is one of the major sugarcane and sugar producers of Karnataka State. The District has three Co-operative Sugar factories and eight khandsari sugar factories. The average crushing of all these sugar factories put together is around 18 lakh tons for the past three years. The three major cooperative sugar factories of the district are:

Table - 2: Bidar district sugar Industries present status

No. of Industry	Permanent workers	Seasonal workers	Total production	Per unit production
08	2,448	11,500	18.30 Lakh Tonne	3.500 Lakh Tonne

Source: Factory wise information

Table - 3: Distribution of workers of sugar industry of Bidar district

Sl. No	Classification of Workers	No. of Members	Percentage (%)
	Technical	548	22.38
	Non- technical	760	31.045
	Daily wage workers	1140	46.89
	Total	2448	100%

Source: Bidar district at a glance, DES Bidar,

The above table reveals that 2448 workers are working in the sugar industry of Bidar district. In that 22.38% are technical workers, 31.04% are non technical and 46.89% are daily wage workers. From the table we can conclude that maximum workers are belongs to daily wage workers.

The following are the four Sugar Factories selected for research work on Health and Safety Measures in Bidar District. They are:

1. The Bidar Kissan Shakkar Karkhana Ltd. Markund

Bidar Kissan Shakkar Karkhana Limited (BKSK) was incorporated in 2000 with its registered office at Bidar, Karnataka. The company has a semi integrated sugar plant, engaged in manufacturing of Sugar and Cogeneration of power, with a installed capacity of 3500 TCD for sugar and 15 MW for the cogeneration unit. Apart from sugar, the company also sells Bagasse, Molasses and Press Mud and Ash. The manufacturing facility is located at Mogdal Village, Taluk and District Bidar in Karnataka. 350 employees are working in this factory.

2. The Naranja Sahakari Sakkare Karkhane Ltd. Bidar

The Naranja Sahakari Sakkare Karkhane Ltd. Is a co-operative venture registered on 27th April 1982 under the Karnataka co-operative society's act 1959 vide Reg. No. DSK:REG5/82c-83 with an objective to facilitate farmers to improve their socio-economic conditions.

The crushing capacity of the sugar plant is 2500 TCD & co-generation unit of 14 Mw. The plant is located at G.N.Nagar Imampur village, 14 km away from Bidar town. Within a short span of 18 months and started the commercial production in 2002. In 2003 Naranja Sahakari Sakhhar Karkhana Ltd. has gained immense expertise in supplying & trading of Sugar, molasses, press mud and sugar etc. 317 employees are working.

3. Bhalkeshwar Sugar Limited, Bhalki

Bhalkeshwar Sugar Ltd. was incorporated in 2000 to establish a sugar cum co-generation project along

with provision for distillery and bio-compost. It is located in a rural and backward area. It will serve as a powerful media for augmenting the socio economic prosperity of the farmers in particular and the industrial development in backward district in general. BSL has a sugar mill with a crushing capacity presently 2500 TCD which can go up to 3500 TCD as the required arrangements are made during the installation of the mill itself. It has a licensed capacity of 5000 TCD which can go up to 6000 TCD. It has licensed capacity of co-gen 30 MW and presently undertaking the generation of 14 MW. It has also license for production of 60 KLPD distillery and presently taking up 45 KLPD production. 340 employees are working in this sugar factory.

4. The Mahatma Gandhi Sahakari Sakkare Karkhane Ltd. Bhalki

The Mahatma Gandhi Sahakara Sakkare Karkhane Niyamit, Established in 1898. The cooperative society registered under the Karnataka Cooperative Societies Act, 1959, operates 3500 TCD sugar mill integrated with an 8 MW cogeneration power plant, in Balki Taluk of Bidar District in Karnataka. It has gained immense expertise in supplying & trading of Beet sugar plant, sugar plant etc. The supplier company is located in Bidar, Karnataka and is one of the leading sellers of listed products. Near about 400 employees are working.

Health and Safety Measures in Sugar Industries

Organizations have a duty to provide a safe and healthy environment for their employees. Health refers to a state of good physical, mental, and emotional well-being. Security means protecting peoples physical health. The main objective of health and safety policies is safe interaction between people and the work environment. Poor working conditions have a negative impact on employee performance. Employees may find it difficult to concentrate on their work. It would be too tiring for her to work any longer. Your health may be compromised. Frequent personal injury accidents can result in significant financial losses for companies. Absence rates and volatility will increase. Companies with poor safety records may have difficulty recruiting and retaining qualified workers. The quality of the entire work may deteriorate. Many deaths, injuries and illnesses can be attributed to the design or gross negligence of safety-related equipment.

Industrial health is essential for:

- Promote and maintain the highest level of physical, social and mental well-being of our employees.
- Improve productivity and quality of work.
- Reduce accidents, injuries, absenteeism and turnover.
- Protect workers from health hazards during work or equipment transport conditions

The following table shows the main health and safety responsibilities of human resources and line managers. Typical health and safety responsibilities.

HR Unit	Managers
<ul style="list-style-type: none"> • Coordinates health and safety Programmes • Develops safety reporting system • Offers accident investigation expertise • Provides technical expertise on accident prevention • Develops restricted - access procedures and employees identification systems • Trains managers to recognize and handle difficult employee situations 	<ul style="list-style-type: none"> • Monitor health and safety of employees daily • Coach employees to be safetyconscious • Investigation accidents • Observe health and safety behavior of employees • Monitor workplace for safety problems • Communicate with employees to identify potentially difficult employees • Follow safety provisions and security procedures and recommend changes as needed

The term "Health" is a positive and dynamic concept and means more than the absence of disease. The World Health Organization (WHO) defines health as "a state of complete physical, mental and social well-being and not simply the absence of disease or infirmity."

Occupational health is a system of public health and preventive medicine applied to industry and companies.

The Importance of Occupational Health

Many workers spend much of their working time in industrial environments, and their environments are usually not conducive to healthy living. In addition, malnutrition, poor hygiene, psychological problems, and the stress and strain they face also affect their health. "On the one hand, efficient work is only possible if the employee is healthy. On the other hand, in the industry (in which he works) there are many conditions that affect his health, which he would not encounter elsewhere. exposing him to certain possible dangers. The field of occupational health was created as a separate branch of public health with the aim of reducing these risks and improving the health of workers. " Symptoms of poor health are high absenteeism and turnover rates, dissatisfaction and lack of discipline, and poor performance in the industry. Low productivity is the reason why both employers and employees can benefit from the implementation of occupational health programs. Occupational health programs and other benefits that are not easily measurable include reduced corruption, improved morale, increased productivity per employee and longer working hours for individuals.

Initiatives to Improve Employee Health Workplace

Health promotion can be broadly defined as any effort to prevent disease and premature death through behavioral and organizational changes. Health promotion focuses on prevention rather than treatment or cure. Therefore, the company's health programs aim to improve and prevent controllable risk factors such as smoking, obesity, high cholesterol, stress, high blood pressure, and lack of physical fitness, which cause most serious diseases. Masu. Raising health awareness is not an easy task. It requires ongoing training, systematic campaigns, and real support from top management. Before a company starts planning a program. Five steps are included in the plan: setting goals, executing the project, allocation of funds and evaluation.

The main health promotion activities may include:

- healthy living
- eating wisely
- exercise & physical fitness
- stress management
- protecting oneself from workplace dangers

The initial effort and capital required to implement such health promotion schemes can be prohibitively expensive, but the long-term benefits are substantial: improved work attitudes, improved morale, increased job satisfaction, and reduced absenteeism and turnover.

Occupational diseases

Occupational diseases are caused by physical conditions and the presence of industrial poisonous substances and non-poisonous dust in the atmosphere. Raw materials, chemicals, byproducts and waste products may enter the body in such quantities as to jeopardize "the wellbeing of the workers." Lead workers, for example, (as cable makers, lead pipe makers, compositors, painters, plumbers, etc.) are often used to make cables. Are susceptible to painter's colic "or wrist drop" disease, which may result in appetite loss, nausea, vomiting, stomach pains, muscular and joint pains, anemia, and intestinal disorders.

Mercury poisoning is also present in barometer and thermometer makers, laboratory workers and electric meter repairers, as well as gold and silver refiners.

Protection against Health Hazards

Employees should be protected against health risks -

- by substituting a less toxic chemical, isolating the product, providing protective clothing, handling and warning equipment.
- by ensuring that (their employees wear badges which indicate the amount of radiation they have been exposed to).
- By controlling noise in working place, by segregating noisy equipment, by dampening vibration, or by redesigning noisy equipment or by use of vibration-absorbing material at certain points and the employees wear ear-coverings or ear-plugs

About Safety

Safety is the primary goal of any organization that has implemented effective safety measures is to minimize work-related injuries and accidents. A well-managed factory will ensure that there are no physical hazards such as (i) slip and fall hazards (ii) collision & obstruction hazards (iii) machinery hazards (iv) fire hazards from falling objects etc.

- Simplicity tripping or falling on the floor is a danger: People fall when they slip. Water, soap, or oil buildup on hard surfaces, etc. Torn or loose floor coverings can make its slippery on the floor.
- Safety issues and accidents: when the factory layout and space management are poor, furniture and equipment are misplaced, resulting in accidents of employees equipment and equipment, tables, chairs, etc. In addition, overcrowding and a narrow space for relocation can result in an accidental collision between workers.
- Hazardous equipment: United frequently, unguarded moving parts, wiring, switches, and cards, edge metal equipment, etc. can cause injuries to staff who work in these areas. Lobbies, plumbing fixtures, and small snail carts are also a problem. All of these should be supervised.
- Hazards as a result of falling objects: When file cabinets, lockers, and shelves are not properly pk, they could fall on employees and injure them. The stocked items, paper stands, and v placed on the working tables could also fall on workers.
- Fire dangers: The likelihood of accidents is high in areas where the paperwork is lengthy and there are precautionary measures taken. Smoking wastes are not properly handled, and there are no provisic safety cans.

Causes and Prevention

In addition to chance events, there are two main causes of workplace accidents that are beyond management's control: unsafe conditions and unsafe conduct.

Unsafe conditions include - Improperly protected equipment, defective equipment, hazardous operations in or around machines, congestion and overloading, and inadequate illumination and ventilation. Accidents can also occur due to other work-related causes. Long working schedules can lead to exhaustion and accidents, as can an era operator or an accountant. The work environment can be tense (for example, seasonal leave off, reduced wages due to demand, etc.).

There are many risks involved in performing.

Unsafe activities, such as -Throwing materials, operating the machine at unsafe speeds; removing, adjusting, disconnecting them; using unsafe equipment or using it incorrectly; putting unsafe items in different

positions, mixing, combining, lifting, and lowering incorrectly; and testing. Employees personality traits can make the situation worse, particularly if they have a tendency to take large risks, have a poor vision problem or have emotional instability.

Effective safety management

Awareness management is a science-based approach to safety management that considers the nature of risk, accidents, and the organization's technology. The role of human beings in social situations should also be investigated. If we try to program machines without paying attention to employee behavior, our efforts will fail. The following are the steps to take a comprehensive safety plan:

- Safety strategy: Every factor must design and implement a safety strategy. Such a strategy should have the ability to eliminate or reduce accidents and injuries in the workplace.
- Top management support: The safety initiative must be firmly backed up by top management. Top management should begin with a safety pledge. Top managers are personally involved in safety activities in a regular manner; giving safety first priority in company meetings and production planning; giving company safety officer high marks and status; and including safety instruction in new employees training.
- Safety committee: Safety committees can be formed to raise employee awareness of safety. safety committees can be formed under the chairmanship of a safety officer. The commission should consist of representatives from staff and supervisors from various departments and levels. It must meet on a regular basis to conduct safety audits and make recommendations for improvement to avoid future accidents.
- Motivation for safety measures: Safety measures must be followed strictly. Violations should not be tolerated. Employees wellbeing has been boosted by repeated reminders of the need for safe behaviour and feedback on effective safety practices. For good safety records, employees could be given rewards and certificates. Safety competitions could be held to encourage employee participation and enthusiasm, as well as reward programs for employees Videotapes.
- Accident investigation and analysis: when accidents occur, they should be thoroughly investigated to find the real cause (poor lighting, poor ventilation, a wet floor, etc.). As soon as possible, do it. To ensure that the conditions under which the accident occurred have not changed significantly, one should conduct an early investigation. Photographs and videotapes can be used to get a better view of the actual scene. In the next step, the injured employee or his supervisors will be interviewed to find out what happened and how the accident occurred. In the third place, an accident investigation report should be prepared detailing what has happened and suggesting measures to prevent similar incidents from occurring.
- Evaluation of the safety officer: Organizations should monitor and evaluate their safety efforts by conducting safety audits at regular intervals. To find any significant changes, accident and injury statistics should be compared with previous accident data. This survey should be used to measure progress in safety management.
- Government support: In 1966, India's national safety council was established to provide support to safety related activities. This council's primary function is not to promote safety at the plant level, but to develop safety programs. Every year, the national safety day is commemorated to mark the council's founding day. Every year, national safety awards are given to industrial units for ensuring that they have safe working conditions.

Conclusion:

In most of the sugar industry there was no first aid facility. No preventative maintenance staff was deputed at the sensitive sections of sugar industry. Workers injuries can be reduced by adopting the

basic safety measures and modifications in the existing design according to the health standards. The qualitative study confirmed that Health and Safety measures were not used effectively in sugar industry. The absence of incentives and inadequate management support were found to be linked with the use of Health and Safety measures. Inappropriate protective device provisions a lack of strict the Health and Safety regulations.

10. Statements and Declarations

- (a) Funding: Please add: Self
- (b) Conflicts of Interest: Non
- (c) Acknowledgments: Self

References:

- Ramoo S.K.(2003), "Sugar Industry in Southern States", The Hindu-Online edition dated 31st October 2003, pp.120-122.
- Namasivayam N. (2004), "Production and Utilization of Sugarcane", Kisan World, 31(8), pp.35-38.
- Rajashree Pathy (2005), "Problems & Prospectus of the sugar industry", Indian Sugar", Vol. LV, No. 9, December 2005 pp.15-18.
- Misra (2005), A sociological analysis of the labour welfare problems of sugar industry.
- Sanjay Awasthi and Rajesh Kumar Srivastava (2006), "Drying of sugar by FBD with chiller for better keeping quality", Ind. Sugar, Vol. LV, No. 10, p.11.
- Asha Thakkar, Balu Kapadnis and Vandana Dhamankara (2006), "Bio-catalytic Bleaching of sugar" Indian Sugar, Vol. LV, No. 11, p. 11.
- Chang Chi Chou, Kalid Iqbal, Min Y.G., Gao D.W. and Emmanuel Duffaut (2006), "SATprocess as a replacement for sulfitation in mill white sugar production", Indian Sugar, Vol.LVI, No. 2, p.11.