

Health status of personnel, working in petrol bunks: A medico-sociological study

(With special reference to Chikmagalure district Karnataka state)

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Abstract

In all over India nearly 55,000 retail outlets of petrol bunks are working and have 15 lack employees directly and indirectly involved in this industry. In retail outlets employees are facing health problems like dust allergy, sounds allergy, pneumonia (respiratory), plastic anaemia (blood), skin allergies and irritations, headache, Nausea etc. The population, environment and health are the main aspects of developing countries like India. The state government, union territories and the union government of taking necessary steps to provide health to all by its policy. It is emphasising on the population control under the name of family planning, it is concentrating on environmental aspects also under government eco-friendly policies. This study has the objectives to collect the information on health conditions of personnel who are working in petroleum industries and asses the remedies for problems.

Keywords: petroleum industry, personnel, health problems

Introduction

The word petroleum comes from Greek. The term frequently used to refer to mineral oils produced by distillation from mined organic solids such as cannel coal and refined oils produced from them, they are derived from crude oil as it is processed in oil refineries, they are collection of well-defined pure chemical compounds, petroleum products are complex mixtures. Petroleum products are very essential products for transportation, heating, electricity generation, asphalt and road oil. They are used to make chemicals, plastics and synthetic materials which we are using in daily life. About 74% of the 6.89 billion barrels of petroleum that we used in 2013 were gasoline, heating oil/diesel fuel and jet fuel.

Petrol stations in India

According to 20 January 2015 there are 51,870 petrol pumps are working India. According to 20 January 2015 there are 2500 petrol pumps working in Karnataka state. Those obtained from crude oil and natural gas processing, including (among many others) asphalts, automotive gasoline's, aviation gasoline's, fuel oils, kerosene, liquefied petroleum gas (LPG), lubricants, naphtha's, and waxes. India is the second most populous country in the world, with over 1.277 billion people (2015), more than a sixth of the world's population. Already containing 17.5% of the world's population, India is projected to be the worlds by 2022, surpassing China, its population reaching 1.6 billion by 2050 ^[5, 6]. Its population growth rate is 1.2%, ranking 94th in the world in 2013 ^[7]. The Indian population had reached the billion mark by 1998. India has more than 50% of its population below the age of 25 and more than 65% below the age of 35. It is expected that, in 2020, the average age of an Indian will be 29 years, compared to 37 for China and 48 for Japan; and, by 2030, India's dependency ratio should be just over 0.4. Norman J. Hynes is a Certified Petroleum Geologists

and President of NJH Energy in Tulsa, Oklahoma. He joined the University of Tulsa's Geosciences Department in 1969, became the Department Head in the late 1970's and is now Professor of Petroleum Geology in TU's Continuing Engineering & Science Education Department. The University Of Petroleum & Energy Studies (UPES) is an Indian University located in Dehradun, Uttarakhand known traditionally for its education and research in fields of energy & power. UPES Dehradun, established through an act of the State Legislature of Uttarakhand in the year 2003, is sponsored by *Hydrocarbons Education and Research Society*. Disease is often considered as medical condition associated with specific symptoms and signs. It may be caused by factors originally from an external source, such as infectious disease, or it may be caused by internal dysfunctions, such as autoimmune diseases. In humans, "disease" is often used more broadly to refer to any condition that causes pain, dysfunction, distress, social problems, or death to the person afflicted, or similar problems for those in contact with the person. In this broader sense, it sometimes includes injuries, disabilities, disorders, syndromes, infections, isolated symptoms, deviant behaviors, and atypical variations of structure and function, while in other contexts and for other purposes these may be considered distinguishable categories. Diseases usually affect people not only physically, but also emotionally, as contracting and living with a disease can alter one's perspective on life, and one's personality.

Death due to disease is called death by natural causes. There are four main types of disease: pathogenic disease, deficiency disease, hereditary disease, and physiological disease. Diseases can also be classified as communicable and non-communicable. The deadliest disease in humans is ischemic heart disease (blood flow obstruction), followed by cerebrovascular disease and lower respiratory infections respectively.

Our seminar topic is Health status of personnel, working in Petrol Bunks a Medico- Sociological Study. The main theme is social sciences and social development. The health conditions of personnel is very important in economic development and social development. Without good health conditions of personnel working in petrol bunks will not contribute to social science and social development. We can't achieve social development without the good health conditions of personnel working in petrol bunks. Nearly ten lack (10,00,000) personnel are working in petrol bunks in our country. Lot of family are directly or indirectly dependent on personnel working in petrol bunks. So we cannot achieve social development without the integrated development of personnel.

Objectives

- To Analyse the health status of personnel working in petrol bunks.
- To collect the social and economic information of workers in petrol bunks, through the medico- sociological perspectives.

Hypothesis

- Now a day's Health status of personnel working In Petrol bunks are not deteriorating.

Statement of the seminar topic

Health status of personnel, working in Petrol bunks A Medico-Sociological study

Statement clarification

- **Health status:** - It's the condition of the person mentally, physically and socially well being
- **Personnel:** - It's the staff or Persons who are working in Petroleum bunks for the salary basis on daily or monthly.
- **Petrol bunks:-** It's the selling units or center of petroleum products like petrol, diesel, lubricants etc.
- **Medico-sociological study** – It's the method of the study of any health issues based on medical along with on sociological perspective, and also study of the issues like social aspects on the basis on socio medical perspective.

Health status of personal in petroleum bunks Medico sociological study in petroleum industry refers to disease which effects human life who are working petroleum industry directly and indirectly in exploration, refinery, transportation, delivering petroleum products to vehicles, containers and so on.

Environment can be defined as

The sum total of all surroundings of a living organism, including natural forces and other living things, which provide conditions for development and growth as well as of danger and damage. Natural resources such as lakes, rivers, forests, wildlife, etc. have a pivotal role in Indian lifestyle but growing population of the country is increasing pressure on environment.

Health can be defined as

Defined by World Health Organization (WHO), it is a "State

of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity." Health is dynamic condition resulting from a body's constant adjustment and adaptation in response to stresses and changes in the environment for maintaining an inner equilibrium called homeostasis.

Disease: can be defined as

A disease is a particular abnormal condition, a disorder of a structure or function that affects part or all of an organism. The causal study of disease is called pathology.

Methodology

In this study we have used simple random sampling method on selected 50 respondents. We have used direct interview method for the collection of information by respondents. Who are working in petroleum bunks, industry? And also used primary and secondary sources to collect the data with structural development perspective.

Sources of information

- 1) **Primary resources:-** To collect the primary information I used self-prepared questionnaire on developmental perspective for interview. Finally information is collected by 50 responders.
- 2) **Secondary resources:-** we have collected information from Articles, journals, library, newspapers and websites.

Theoretical perspectives:

We used structural functional theoretical perspective for this success of study.

Topographical features of the study

Chikkamagaluru is a district in the South Indian state of Karnataka. Coffee was first cultivated in India in Chikkamagalur. The mountains in Chikkamagaluru which are a part of the Western Ghats are the source of rivers like Tunga and Bhadra. Area. • Total, 7,201 km² (2,780 sq mi). Population (2001). • Total, 1,139,104. • Density, 158.19/km². Geographical scope of study area is chikkamagalore dist., in Karnataka state regarding public policy and sustainable development. Chikkamagalore dist., will come under the famous western guhths area. Chikkamagalore Dist. famous for Coffee, tea, Cardamom, Rubber plantation crops. It is also famous for horticulture corps like coconut, aracanut, Banana, Mango, Sapota and other crops. It is also famous for Paddy, Raghi, Jower and other food crops. It is also famous for commercial crops like chilles, Oninen, Potato and other crops. It is also famous for tourism sports like Dattapita, Mullaiyana giri, Kallatthigiri, Kemmanna gundi, Amruthapura temple and so on. Information regarding chikkamagalore dist., as on today. There are BPC – 18, HPC-24, IOC-30, Reliance-02, SR-01 total 75 bunks.

Data analysis

The data collected by using all the research methods, and others sources are analyzed by essential statistical techniques by using analysis of data research report. The data was collected on structural development perspective.

Table 1: Personal profile of the respondents

S. No	Personal profile of the Respondents				
	Age	18-28	29-39	40-50	51+
1	Age	18	20	04	08
2	Gender	Male			Female
		40			10
3	Caste	SC	ST	OBC	Others
		10	08	15	05
4	Religion	Hindu	Christian		Muslim
		38	05		07
5	Education	Illiterates	Primary education	Secondary education	Higher education
		00	24	20	6
6	Monthly Income	Up to 8000	8001 to 10000	10001to 12000	12001+above
		20	21	6	3
7	Marriage	Married	Bachelor	Widow	
		25	20	5	
8	Family	Joint	Nuclear		
		1	49		

In demographic information age, gender, education qualification, marital status, income size type of family etc, are various information's are followings

- **Age:** Age is the important factor at the time of interviewee because if the respondents are below 18 years age there will be considered as minors. They are not eligible into any contract according to Indian contract act-1872. If the age is above 60 years they may not be physically fit to discharge their petrol bunk work.
- **Gender:** We interviewed 80% of the male respondents. 20% of the female respondents.
- **Cast:** at the time of research in India cast plays an important role even though India is secular state. We have interviewed 18% SC, 17% ST, 32%OBC (08% Veerashaivas, 7% vakkaligas, 8% kurubhas, 02%

- Upparas, 01% Devangas, 01% Maratees, 02% Banjara naiks, 01% Gownders, 01% Achars, 01% Kuruvin shettys) and others 09%.
- **Religion:** India is the mother land of several religions. Even though its. secular state all the statistics are collected on the basis of religion like Hindu, Muslim, Christian, Jains, Parasis, Buddhists, siks and so on. We interviewed Hindus 76%, Christiyans 10%, Muslim 14%.
- **Education:** Education plays in important role in India. Due to several governmental and non-governmental (NGO`s) intuitional efforts. Majority of the respondents are literates. In the interview 48% as the primary education, 40% Secondary education and 12% higher education.

Table 2

S. No.	Components of Health status	Yes	No
01	Are you suffering from Respiratory problems?	05%	95%
02	Are you suffering from Skin allergies/ Irritations problems?	30%	70%
03	Are you suffering from Anemia?	05%	95%
04	Are you suffering from Headache problems?	10%	90%
05	Are you suffering from Nausea?	20%	80%
06	Are you suffering from Euphoria?	03%	97%
07	Are you suffering from Nervous system?	02%	98%
08	Has your owner provide frequent medical checkup?	100%	00
09	Has your petrol bunk well equipped with first aid box,?	100%	00
10	Has your petrol bunk well equipped with fire extinguisher?	100%	00
11	Has your petrol bunk provide pure /filter drinking water ?	100%	00
12	Has your petrol bunk toilet facilities?	100%	00
13	Is it your Dealer of petrol bunk is giving the holiday for the above decease?	100%	00
14	Do you know the telephone numbers of police and fire emergency?	100%	00
15	Are you utilizing/aware about Govt. Health welfare policies?	100%	00
16	Are you socially suffering due to unhealthy conditions of petrol bunk?	00	100%
17	Do you feel economically suffering due to unhealthy conditions of petrol bunk?	00	100%

- **Respiratory problems:** 05% are suffering from respiratory problems. 95% are not suffering from respiratory problems. Health effects from exposure to petroleum products vary depending on the concentration of the substance and the length of time that one is exposed. Breathing petroleum vapors can cause nervous system effects (such as headache, nausea, and dizziness) and respiratory irritation. Very high exposure can cause coma

and death. Liquid petroleum products which come in contact with Individuals who experience health problems that may be related to a petroleum spill.

- **Skin allergies/ irritations problems:** 30% are suffering from skin allergies/ irritations problems. 70% are not suffering from skin allergies/ irritations problems. Irritated skin can be caused by a variety of factors. These include immune system disorders, medications and

infections. When an allergen is responsible for triggering an immune system response, then it is an allergic skin condition.

- **Suffering from Anemia:** 05% are suffering from Anemia problems. 95% are not suffering from Anemia problems. "Benzene is a natural component of crude and refined petroleum. In the United States, gasoline typically contains less than 2% benzene by volume, but in other countries the benzene concentration may be as high as 5%. Benzene was also an important component of many industrial cleaning and degreasing formulations, but now has been replaced mostly by toluene, chlorinated solvents, or mineral spirits. Although benzene is no longer added in significant quantity to most commercial products, traces of it may still be present as a contaminant." [ATSDR Case Studies in Environmental Medicine: Benzene Toxicity. June, 2000. p. 7] "Natural source of benzene include volcanoes and forest fires. Benzene is also a natural part of crude oil, gasoline, and cigarette smoke."
- **Headache problems:** 10% are suffering from Headache problems. 90% are not suffering from Headache problems. Inhalation of petroleum products can cause headaches, rapid heart rate, tremors, and confusion.
- **Nausea (vomiting):** 20% are suffering from Nausea problems. 80% are not suffering from Nausea problems. Aspiration pneumonia Due to emetics, nausea/vomiting from poison agent, and inhalation of activated charcoal or petroleum products
- **Euphoria (excitement):** 03% are suffering from Euphoria problems at the time of Decantation of petroleum products from tanker truck to underground tank in ROs. 97% are not suffering from Euphoria problems. The potential hazards of swallowing hydrocarbon leads to euphoria.
- **Nervous system:** 02% aged personnel are suffering from Nervous system problems. 98% are not suffering from Nervous system problems. Health effects from exposure to petroleum products vary depending on the concentration of the substance and the length of time that one is exposed. Breathing petroleum vapors can cause nervous system effects (such as headache, nausea, and dizziness) and respiratory irritation. Very high exposure can cause coma and death.
- **Frequent medical checkup:** 100% ROs Dealers are providing frequent medical checkup facilities to personnel working in petrol bunk by the directions of labor department, health ministry and oil companies. The dealers feel good health conditions of personnel will help to economic and social development.
- **Equipped first aid box:** 100% ROs Dealers are providing well equipped first aid box. First aid box contains medicated cotton, tincher, detol, bandage clothes, spirit, scissors, antiseptic ointment, band aid, parasitmal tablets for cold, cough and fever. Petrol bunks are working national highways, state highways and connecting district main roads. Were accidents may occur in such circumstances people need first aid treatment before admitting to the hospital. All petrol bunk personnel knows first aid treatment.
- **Fire extinguisher:** 100% ROs Dealers are providing equipped fire extinguisher. In all business places like malls, commercial place, hotels, theaters, schools, and service areas are equipped with fire extinguishers. To fight faire at the time of fire accidents. Petroleum products are highly inflammable and dangerous at the time of fire accidents so all petrol bunk well equipped with fire extinguishers, sand buckets, water buckets.
- **Pure/filter drinking water:** 100% ROs Dealers are providing pure /filter drinking water. In recent days due to shortage and non-availability of pure drinking water. So many water born disease are common. So by the directions of oil companies all petrol bunk dealers are providing free pure drinking water. It is a basic need.
- **Toilet facilities:** 100% ROs Dealers are providing toilet facilities. By the directions of Union government of India under the name of swacha bharath mission oil companies are providing some financial incentives to dealers to build and maintain the separate toilets for ladies, gents and handicapped persons all so. Oil companies are invested in terms of hundred corers for construction of new modern toilets.
- **Holiday:** 100% ROs Dealers are providing holiday facilities for personnel working in ROs on the directions of labor department of state government. Holidays are very essential for working personnel to refresh themselves and to overcome work stress. Mentally and physically healthy personnel will contribute to petrol bunk work and social development.
- **Telephone numbers of police and fire emergency:** 100% ROs Dealers are providing telephone numbers of police and fire emergency facilities to all personnel and telephone numbers boards are exhibited on the petrol bank front door to help the needy person at the time of accidents and thefts in around the petrol bunks.
- **Utilizing/aware about Govt. Health welfare policies:** 100% personal are utilizing govt. facilities and aware about Govt. Health welfare policies when needed. The information above said policies will be given by the ROs dealers. For ex., Pradhanamantri Jana-Dhan yojana, yashaswini and other policies.
- **Socially suffering due to unhealthy conditions:** 100% respondents are not socially suffering from unhealthy conditions in society. Because the ROs dealers well educate and help the personnel by conducting repeated health checkup camps to helps the personnel.
- **Economically suffering due to unhealthy conditions:** 100% respondents are not economically suffering due to unhealthy conditions. Because of awareness in personnel regarding health and by help of ROs dealers, NGOs and government health concerned programs.

Findings

- Personnel working in petrol bunk since long duration are facing some above said health problems. But Personnel working recently in petrol bunks are not facing critical health problems. Personnel will not continue their service in petrol bunks properly. All personnel are almost causal personnel only.
- But gnarly Gasoline (petrol) contains Benzene. Medically Benzene is carcinogenic. in nature it leads deadly disease cancer. Inhalation of petroleum products creates Skin problems, Irritations, and it leads to nerves related disease. Inhalation of petroleum products causes vomiting sensation (Nausea). Sometimes Euphoria keeps personnel in intoxicated mental condition.

Confirmation of Hypotheses

By above all studies and statics we can say prove that the health's of personnel working in petrol bunks are not deteriorating. (The personnel working in petrol bunk long terms may face some health problems)

Suggestions

We suggest the government, oil companies, the health ministry, should study this aspect. And the standard guidelines should be released to the concerned petroleum industry. The suggestion given by the health ministry and the government should be strictly executed.

Conclusions

Personnel working in retail outlets and petroleum industry in exploration, refinery, terminal, transportation and dispensing to vehicles and containers will face health problems according to the working conditions. So proper care, proper safety measures should be taken in all the stages. Because petroleum products are highly inflammable and can causes distorters. Our aim is no accidents. Human life is precious and environment is precious and we have to save our mother earth.

References

1. Petroleum Wikipedia
2. Hydrocarbons Education and Research Society.
3. Norman J. Hyne Wikipedia.
4. Medical sociology from Wikipedia, the free encyclopedia. April 2014.
5. <http://www.chickmagalur.nic.in> population.