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HEALTH APPRAISAL OF THE FOREST GUARDS AND SCALERS – A STUDY FROM UTTARAKHAND, INDIA

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ABSTRACT

Background: The forestry personnel such as forest guards and scalers are one of the human resource serving in the forests, national parks in India. They work in difficult terrains and are exposed to adverse environmental conditions. They are responsible for protection of forest resources and prevention of any illegal activities like felling of trees, poaching, encroachments, grazing, forest fires etc. and a step is required regarding their health profile in India. Objective of the study was to know the morbidity profile and certain selected lifestyle related risk factors of non-communicable diseases among forest guards and scalers.

Methods: The present cross-sectional observational study was conducted among forest guards and scalers at forest Training Institute, Haldwani, Uttarakhand. Clinical history was recorded and relevant physical examination was carried out. Parameters like weight, height, and blood pressure were recorded.

Results: In the present study, 88 forest guards and scalers were studied, out of which 74% were male. Addiction was present in 53.4% of participants. 40% of participants were found to be overweight and obese.20% of the participants were hypertensive and about 4.5% of them reported to be diabetic. About one-fifth (20.5%) had GI problems and 12.5% of them had various musculo-skeletal problems.

Conclusion: Addiction to alcohol and tobacco was found in majority of the male participants. Lifestyle related risk factors of non-communicable diseases were seen so periodic health examinations and sensitization regarding maintenance of healthy lifestyle needs to be encouraged.

Keywords: Forest guards, scalers, morbidity, addiction, BMI.

INTRODUCTION

Forest guards also known as forest beat officers assist the forest range officers (FRO) for managing the forests environment and wildlife related issues of a forest range of a state/union territory of India. Forest guards and scalers are expected to invigilate and notify about the happenings in forest, these brave heroes walk or patrol through the forests, keep the sign board, checks forest produce, control & supervise the works ordered by range officer, carry out silviculture works such as sowing, plantings, nursery works, collection of seeds, pruning, keeps record of cut stumps of trees in the forest. Forest guards are

the soldiers who work tirelessly in extreme conditions to ensure the safety of India's wildlife [1]

Uttarakhand state was carved out in the year 2000 as a new state of India. Terrain and topography of Uttarakhand is largely hilly with large areas under snow cover and steep slopes [2]. Forest guards and scalers face the extreme climatic conditions and are at risk from encounters with wild animals. Health of these forestry personnel and awareness regarding health promotion, maintenance of health and first aid measures will help in adapting to the harsh environmental conditions and in performance of the job responsibilities more effectively & productively. The work environment constitutes an important part of man's total environment, so health to a large extent is affected by work conditions [3]. An ideal working condition is a type of environment that is not only harmless from health standpoint but also it enhances physical and/or mental health status as well as safety of the workers involved. Forest related jobs are known as heavy duty and rather unhealthy which are usually performed under difficult and adverse circumstances [4]. Around the world, there are often discouraging trends of rising accident rates and a high incidence of occupational diseases and of early retirement among forestry workers. ILO code of practice aims to protect workers from hazards in forestry work and to prevent or reduce the incidence of occupational illness or injury[5]. Safety in the forestry sector depends on matching individuals' work capacities to the conditions under which they perform their tasks. The workers' capacities in turn vary with age, experience and health status[6]. Occupational stress is one of major occupational hazards can induce decrease in productivity absenteeism, labor force displacement, work conflicts and the highest health care cost to employees[7] . These groups of forestry personnel are exposed to stressful work conditions and there is paucity of studies among them, so the present study was conducted with an aim to assess the morbidity profile & certain lifestyle risk factors of non communicable diseases among forest guards and scalers.

METHODS

A cross-sectional observational study was conducted by the department of community medicine of Govt Medical College, Haldwani at forest Training Institute, Haldwani. On request of forest training institute for sensitization of forest guards regarding healthy lifestyle followed by health check up, faculty members and paramedical staff of community medicine department visited the forest training institute. All the forest guards and scalers who were present at the time of clinical examination and willing to participate were included in the study. The study was conducted during September – October 2014.

Height of studied forestry personnel was recorded with the help of measuring scale drawn on the wall. Weight was measured with the help of properly calibrated weighing machine. BMI was calculated as weight (kg) / [height (m)]^2. For categorization of participants on the basis of body mass index (BMI), WHO classification[8] has been used in the present study. Individuals with body mass index (BMI) > 30 kg/m^2 were considered as obese, 25.0–29.9 kg/m^2 as overweight, 18.5–24.9 kg/m^2 as normal and < 18.5 kg/m^2 as underweight.

The Blood Pressure (BP) was measured using mercury sphygmomanometer in sitting position. The JNC-7 classification[9] has been used for categorization of B.P. as follows: Systolic BP >140mm Hg &/or Diastolic BP >90mm Hg or any subject on antihypertensive treatment was considered as hypertensive. Individuals with SBP 120-139 or DBP 80-89 were classified as pre-hypertensive. SBP < 120 & DBP < 80 was considered as normal range of blood pressure. History of present health problems and addiction to tobacco, alcohol & smoking were recorded. A predesigned questionnaire was used for collection of data.

Statistical Analysis: The gained information was collated and checked for any missing information and then entered into MS excel. Simple descriptive analysis in the form of percentages has been done for the tabular presentation of data.

RESULTS

A total of 88 forest guards and scalers participated in the study. Majority of the particpants belonged to the age group 45-60 years (73.9%) followed by 13.6% in the age group 30-45 years and 12.5% were below 30 years of age. The age of the participants ranged from 22 to 59 years with a mean age of 46.04 years and a standard deviation of 10.27. The sex-wise distribution showed that males were in higher percentage (73.9%) than the females. Majority of the participants were non-vegetarians (78.4%). Among the respondents 82 (93.2%) belonged to Uttarakhand state, and rest 6 (6.8 %) were from other states.

Table 1 : Socio-demographic characteristics of participants

Factors	Number (%)
Age-groups (in years)	
<30 years	11 (12.5)
30-45 years	12 (13.6)
45-60 years	65 (73.9)
Sex	
Male	65 (73.9)
Female	23 (26.1)
Dietary status	
Vegetarian	19 (21.6)
Non-vegetarian	69 (78.4)
State-wise	
From Uttarakhand	82 (93.2)
From Uttar Pradesh	6 (6.8)

Table 2: BMI, BP and addiction Profile of the participants

Profile	Number (%)
BMI classification	
Underweight	5 (5.6)
Normal	48 (54.5)
Overweight	30 (34.1)
Obese	5 (5.7)
Blood Pressure	
Normal	32 (36.4)
Prehypertensives	38 (43.2)
Hypertensives	18 (20.4)
Addiction Profile	
Alcoholics	34 (38.6)
Smokers	11 (12.5)
Tobacco chewers	9 (10.2)
No addiction	41 (46.6)

Table 3: Morbidity Profile of the participants

Morbidity profile*	Number (%)
Diabetes	4 (4.5)
Depression	1 (1.1)
GI problem	18 (20.4)
Musculoskeletal problem	11 (12.5)
ARI	2 (2.2)
CNS problem	8 (9.0)
Refractive errors	58 (65.9)

*Multiple responses

As per Table 2, 34.1% and 5.7% of studied forestry personnel were found to be overweight and obese respectively. 18 (20.4%) particpants were found to be hypertensives on the basis of clinical examination and history of taking anti-hypertensives medications. 38 (43.2%) personnel were diagnosed to be in the pre-hypertensive stage need to be sensitized for lifestyle behavioural modification together with periodical health check up.

Out of the total 88 forestry personnel, addiction was present in more than half of the them (53.4%) comprising of 38.6% alcoholics, 12.5% tobacco smokers and 10.2% using smokeless form of tobacco. The minimum duration of intake of addiction substances of any form is 4 years with maximum intake for 25 years. None of the female forest guards reported any form of addiction.

Table 3 shows distribution of studied forestry personnel according to their self reported morbidities. Gastro-intestinal problems were reported by 20.4% of participants, musculoskeletal problems like back pain, neck pain and joint pain reported by 12.5% and CNS problems like tingling and numbness were present in 9%. Non-communicable diseases like diabetes mellitus in 4.5% and hypertension in 20% (Table 2) of participants were seen. Refractive errors on the basis of use of spectacles were seen in 66% of participants. Three forest guards had given history of cataract operation in the eyes.

DISCUSSION

The sustainable forest management is not possible without the sustainable use & development of human resources, especially of forestry workers who are often the defacto managers of forest resources[10]. There is paucity of studies among forestry personnel, the findings of present study have been discussed with studies on the similar aspects among people in occupations with some similarities to forestry personnel like police personnel. Similarly study among traffic police personnel who work under adverse environmental conditions has been included for discussing the results of the current study.

In the current study majority of studied participants (73.9%) belonged to age group of 45-60 years with mean age of 46 years which is similar to observation of mean age of police personnel (48.80 years) in study by Jahnavi et al (2009)[11] in Vijaywada. About three-fourth (74%) of participants were male in current study. The studies conducted by Jahnavi et al (2009)[11] in Vijaywada and Selokar et al[12] in Wardha observed 95% of police personnel to be male and similar trend was also observed by Satapathy et al (2004)[13] in their study in Brahampur where 90% of traffic police personnel were male.

Regarding the BMI stratification of participants, 34.1% and 5.7% of them were overweight and obese respectively. Almost similar observations

were seen in studies by Satapathy et al (2004)[13] in Brahampur among traffic police personnel (38.3% overweight & 8.5% obese) and Jahnavi et al (2009)[11] in Vijaywada among police personnel (35 % overweight & 7 % obese)

The present study found that 20% of the participants were hypertensive which was lower in comparison to 25% hypertensives among traffic police personnel in study by Satapathy et al (2004)[13] in Brahampur and 33% hypertensives among police personnel in study by Jahnavi et al (2009)[11] in Vijaywada.

The study revealed that 39% of forest guards were addicted to alcohol followed by 12% addicted to tobacco smoking and 10% addicted to tobacco chewing. Satapathy et al (2004)[13] in their study in Brahampur observed addiction of tobacco chewing in 48% and alcohol consumption in 21% of traffic police personnel, whereas Jahnavi et al (2009)[11] observed addiction to tobacco in 22% and to alcohol in 24% of police personnel in Vijaywada.

In the present study, the forest guards had revealed complaints related to GIT system (20%), musculoskeletal system (12%), CNS system (9%) and diabetes (4.5%) on direct interviewing them. Refractive errors were seen in 66% of participants. High percentage of refractive errors could be due to age related presbyopia as majority of participants were above 45 years of age.

CONCLUSION AND RECOMMENDATION

Alcohol addiction was observed in higher percentage (39%) of forestry personnel as compared to the use of tobacco. Overweight and obesity as lifestyle related risk factor was seen in 40% of participants. 20% of the participants were hypertensive and about 4.5% of them reported to be diabetic. . Different physical morbidities comprising of GIT, musculoskeletal, CNS system were detected. Introduction of periodical health examination may be required to detect any morbidity developing or existing among the forest guards. Regular sensitization of forest guards regarding maintenance of healthy lifestyle should be conducted on regular intervals.

LIMITATIONS

The study findings cannot be generalized to the whole population as this was based on purposive sampling of participants. The study did not explore the work environment related stress in these forest guards. The results are based entirely on the respondent's honesty in revealing their health profile information. No vision testing for the refractive errors

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