An Exploratory Case Study on Employee Health and Wellbeing: Indian Railways Case Study

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Keywords

Introduction and Background

International organisations such as the World Health Organisation (WHO) stipulate the nutrient intake parameters for in nutrient requirement for individuals and this guideline has been followed by India as a basis when determining nutrient i the Indian Council for Medal Research (ICMR), following the guidelines prescribed by the WHO, arrived at a base level of has been followed since 2009 as a basic guide.

The guidelines prescribed in 2009 accommodate variations in recent social status of Indians, reduced physical activi aspects, and micro nutrition and under nutrition conditions affecting Indians. Based on these parameters, the expert gr contributing to energy, protein, calcium, fat and iron levels. The expert group also concluded that a BMI of 20.3 is between 18 and 30, with height of 172 Cm and weight of 60 Kg, and for women with height 161 cm and weight 55 Kg, group.

In terms of other body composition, the ICMR expert group indicated that for men (sedentary), a total fat level of 20% is level of 10, equated to 25 g/p/d. Similarly protein is fixed at 60 g/kg/d. Required energy for men with sedentary work m/g/d. These levels vary for women.

Based on the above guidelines, it is assumed that if an individual derives such components, then they are considered to attributable to an individual's wellbeing status, and these will influence the organisational factors such as productivity, r expenses etc. This prompted us to posit the research question:

What is the health & wellbeing status of individuals in an organisation?

The above question, while looks simple to posit, contains a complex nature of data collection as many organisations health & wellbeing status regularly, and then document the same into the employee records. While the working condit factors can be attributed to these, we felt that there is a lack of awareness in this domain, and this could be a main cau Railways (Southern Railways) to conduct a pilot study to assess the health & wellbeing of their employees so that awa Southern Railways because we understood that a Master Health Check Up was conducted in one of their factories in 2 was very keen to promote Health & Wellbeing initiatives among its employees.

We approached the Chief Medical Director Dr. Ram Prakash to explore the possibility of such a pilot study and this initiati

Research Method

This study used a single organisation case study approach as the main method. The organisation is Indian Railwa Headquarters for our sampling due to convenience.

We followed a case study approach for literature clearly supports data collection through case studies in specific organisa supports case study approach as an appropriate approach in the exploration research study [3].

The case study approach we employed consisted of observation, individual discussions, formal individual interviews and g

This research study collected research data through three stages as indicated in the abstract section. The data collectior in a survey form, blood samples and pathology testing, and finally body composition analyses using a bio-impedance mor

Nutritional data collection

The first stage of data collection involved a baseline assessment using a mixed method approach. Literature also su theory-building stage to be able to develop appropriate questions to sort the real answers in this study [4-7]. The r approach followed by a quantitative approach. In order to produce evidence that the outcome of the research is prope due to the exploratory nature of the research project [8-10]. The qualitative interviews involved understanding diet habi the interviews. The interview questions covered a range of topics such as eating habits, quantity of food consumed, phy were recorded and then transcribed for analysis. The data collected was then transcribed into a nutritional software appl

Blood sample data collection

The second stage of data collection pertained to pathological validation. Qualified medical professionals from the Rail assess fat level, diabetic condition, and other mineral levels. The blood samples were then analysed in the hospital pat nutritional software application.

Bio-Impedance data collection

The third and final level data collection involved assessment on body fat and fluid composition. A bio-impedance moni time constraints, at the time of writing, only participants assessed as non-diabetic were subjected to this data collection.

Sampling

We received Institutional Ethics Approval from the Chief Medical Director of Southern Railways to conduct the study a study protocol was approved, a formal invitation was sent to the 'office cadre' in the headquarters building in Chennai. T to the study and the data collection procedural aspects, and it was clearly stated that the participation was voluntary. Th staff. The study did not exercise any screening criteria.

In total 122 individual were involved in the data collection over a 10-week period. The sampling technique used was 'ran basis of voluntary participation. This was crucial in determining the direction of the study.

Data Analysis and Discussions

The samples were probed with a set of fundamental questions pertaining to their health & wellbeing aspects, mainly concentrated on the type of food being consumed, their frequency, sedentary and non- sedentary habits, alcohol con other wellbeing conditions of individuals. The data collection instrument is provided as Appendix 1.

The data collection involved both qualitative and quantitative aspects. The data were transcribed in to a nutritional sc verified for accuracy. The nutritional software application produced various nutrient levels based on food consumption. SPSS application and analysed, leading to the tables produced in this paper. The data were masked for any personal

undertaking given to staff while collecting data.

The data were not amended. Any potential bias was eliminated at the time of data analyses by removing potential st
assured that the outcomes projected in this report are independent, unbiased, and views expressed by employees as
wellbeing aspects.

Reliability of the Data

We conducted a reliability test on the data using Cronbach Alpha method. The reliability was quite low. The low level c
scattered and the total number of items was low to be able to get a true reflection of reliability. It should be noted that
on the analyses of data (Table 1).

We conducted standard descriptive tests on the data. The following tables provide the results of descriptive statistics (Ta

The mean of the age is only 50 years, with minimum age at 27 years, and maximum age at 68 years. The data indicates t
and above (Table 3).

The participants were not equally distributed in terms of gender, with 60% of the participants were male and 40% female

Blood pressure of the cohort showed that 48% are considered within the normal blood pressure and 49% of the participa

We ran descriptive statistics for other variables and found that 59% of participants had a normal family history indicatin
heart disease. 58% of the participants indicated that one of the parents had diabetes.

44% of the participants reported a family history of hypertension, and 18% reported family history of cholesterol.

Among the participants, 8% reported smoking habit and 11% reported alcohol consumption.

The low reliability value of data prompted us to conduct a factor analysis. We used a varimax rotation and the fact
returned five groups of factors as strong contributors to health & wellbeing of participants. We arbitrarily titled them
intake, Family History Unknown and Diabetic (Table 5).

The participants exhibited strong levels of hypertension, cholesterol and hypothyroid. When the calorie levels were exam
high level of energy consumption (average 2100 calories) per day. The intake of sugar is also highly loaded (0.813) indic
sugar intake. The negative correlation value (0.707) on family diabetic history, and family history unknown factors (0.591
factors of lack of health & wellbeing

We also conducted a bio-impedance test using a monitor. This test was conducted on 39 participants who were found
was 24.6 and the BMI was 26.7. When we split the data for male and female, we noticed that the males had a higher fat
accepted level for Indian population (21 for fat mass and 23 for BMI).

In addition to the factor analysis, we also conducted a basic regression model. The model summary is shown in (Figure
Diabetic History was returned as a strong predictor and the current levels of fat and protein are contributing to a tren
able to find evidence in the nutrition software for this as the energy consumed is about 2100 calories per day and energ
on reported activities for the participants. Further, high levels of fat masses and cholesterol also indicate lack of 'burning'

Inference

The data analyses and the interviews indicated that majority of the participants had a high intake of calories (about 180
expended about 60 Kcal on a daily basis. We also noticed that participants had a high level of Cholesterol, BMI and fre
participants had high levels of hypertension (Table 6).

The data derived from the nutrition software application indicates that some minor adjustment to participants' diet wou
example, we noticed that the average diet consisted of Beans foogath, Chicken curry, Coconut chutney, Dhal fry gr., Idl
Rice, Instant Snack, and Sugar.

The calorie generated from such a diet was calculated as 2560 Kcal. However, our interviews indicate that for a dietary physical activity, leading a BMI calculation of 24.8. This average participant returned a fat mass of 19.74 and a fat mass that the standard is 11- 18 for men and 21-28 for women. If we used the standard measure, the participant is assumed to

Another observation we noticed for this average participant was the prevalence of family history of diabetes and he calculation of risk, the participant is of high risk in terms of developing diabetes, heart disease and hypertension, unless s

When the results are looked at an organisational point of view, there are potential productivity issues as the particip result in absent days due to health & wellbeing issues, as well as critical organisational knowledge not available in deman hospital expenditure incurred by the organisation either as a one-time expense or as an ongoing maintenance expense.

In terms of family issues, the risk of lack of health & wellbeing can result in sudden loss of family members, or the family at a level expected, and this might result in work downgrade. Such an event might result in loss of income, or in specific family members.

The above risk events are likely in extreme cases, and we are not suggesting that these will occur. However, lack of healt adverse effect on individuals and the organisation. The only way to combat this is by organising regular health checks based on health checks. The intervention can address dietary habits, physical activity, awareness programs and mor promotes a healthy lifestyle in and out of the organisation!

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