



A comparative study on dietary pattern and meal skipping habits of diabetic works

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ABSTRACT

Workers are the pillars of the nation. Hence, the health of the workers must be maintained in terms of Nutrition. But our workers do not concentrate in dietary aspects and skips meal regularly. Improper dietary habits affect the health and the well-being of the workers. To study the dietary pattern and meal skipping habits of dietary work force. Adopting random stratified sampling technique, 100 diabetic general shift workers and 100 diabetic rotation shift workers were selected. Interview schedule was used to obtain the dietary pattern and meal skipping pattern of the subjects. After obtaining the details, raw data was coded and subjected to statistical analysis. About 84.5% and 15.5 were mixed vegetarian and vegetarian respectively. About 86% consumed all three meals a day. 79% brings food from home to workplace. About 37% of diabetic workers skip meal, among them, majority of workers skips breakfast (52.7%). Considering the dietary habits of the diabetic workers, it is essential to educate the workers regarding the good nutritional habits to maintain the blood glucose levels and to prevent micro and macrovascular complication. Employees must provide "health friendly" foods at canteen for the subsidized rates to maintain the wellness of diabetic workers.



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INTRODUCTION

Expanded move work has numerous financial focal points, including higher business, expanded administrations to clients, and improved exchange openings. Then again, move work is a danger factor for constant sicknesses, for example, Type 2 diabetes. Move work that incorporates for the time being shifts upsets the circadian natural clock administering the body's inside guideline of rest and wake times, which thusly influences energy digestion and may advance weight gain. During evening rest, the body is in a fasting state advancing arrival of put away glucose and relative insulin obstruction (contrasted and day) to allow special utilization of glu-

cose by the focal sensory system instead of muscle energy. Eating during nighttime hours, when the body is customized to be snoozing, upsets the metabolic milieu. Intense test contemplates have discovered that a feast eaten around evening time creates an overstated glucose and lipid reaction contrasted and a similar supper eaten during the day. Long haul outings in glucose and lipids are hazard factors for cardiovascular illness (Bonnell *et al.*, 2017).

Nighttime eating causes aggravations of intestinal motility, influencing the assimilation, retention, and usage of pharmacological medications and supplements. From a chronobiological perspective, the human species is diurnal (i.e., dynamic during the day), which clarifies why night laborers will have a diminished craving during the night when the living being is customized for compensation, fasting, and endogenous assembly of blood glucose (Lowden *et al.*, 2010). Food decision may assume a job, anyway essentially eating around evening time when the body is prepared for rest may have suggestions for well-being (Centofanti *et al.*, 2018). Shift laborers may communicate higher utilization paces of quick nourishment, guilty pleasure in high-fat breakfast dinners, or resort to smoking and drinking liquor (Ojike, 2015).

MATERIALS AND METHODS

A cross-sectional study is directed among 200 Diabetic workers who were ESI beneficiaries. The purposive random sampling method is utilized for choosing the subjects. The subjects were equally categorized into General shift and Rotation shift duty. After obtaining permission from the hospital authority to perform the study, selected individuals were briefed about the research purpose and obtained written consent from all the subjects. Individuals with micro and macrovascular complication, subjects with cancer, pulmonary tuberculosis, pregnant and lactation women were excluded from the study.

The ESI beneficiaries between the age group of 20 to 60 years with diabetes and were either in General or Rotation shift duty were selected for the present study. The food intake pattern of diabetic workers is the aim of the study. A Pretested, standardized interview schedule was used to collect information about the food intake pattern of the diabetic work force this includes the meal skipping pattern and food to work place. To check the reliability and validity of the interview schedule, Pilot study was conducted among one-tenth of the study participants. After collecting the required information using the

interview schedule, the obtained information was coded in excel and were subjected to statistical analysis and the results were interpreted in Table 1.

RESULTS AND DISCUSSION

In the current study, more than one third (84.5%) of the subjects consumed mixed diet and only 15.5 % were vegetarians. It is interesting to note that more number of General shift workers consumed vegetarian diet and whereas majority of rotation shift workers consumed mixed diet. Since nowadays non-vegetarian foods are easily available round the clock in the metropolitan city like Chennai made rotation shift workers to prefer consuming mixed diet. A similar study revealed that majority of the subjects was vegan connecting a moderately advanced proportion of night shift subjects (82.66%). Amongst non-vegetarian food, egg and chicken are favored added by day shift focus (Bonnell *et al.*, 2017).

It is clear from our study that the majority of our study participants consumed three meals per day followed by two meals by 12.5% of the participants and only 1% consumed four meals per day. It is also noted that more number of rotation shift workers consumed only two meals and at the same time more number of three meals were consumed by General shift works. The duty schedule and meal timings of the work place were mentioned as the reasons for poor eating habits among rotational shift workers in Table 2. A study conducted by Bonham (2016) among the shift workers showed that the meal expended through a day shift varied by meal expended on night shift, but there were no differences in overall energy intake. About 63.33 percent topics dodged meals to stop stomach upsets whereas 67.27 percent subjects took alcohol to sleep (Bonham *et al.*, 2016).

It is very well reported that majority (79%) of workers consumed packed lunch brought from home, about 20% consumed canteen foods and it is heartening to know that only 0.1 % does not bring food to work place. It is also reported that canteen food are consumed more by rotation shift workers than General shift workers and on the other hand, packed lunch is brought more by General shift workers than rotation shift workers. The foods chosen at lunch were bread based items, though the dinners burned through around evening time were blistering "home-cooked" style suppers with a higher energy thickness. Following this sort of supper structure seemed critical to the members, and the occasion to set up a prepared dinner and offer with partners was related with feelings of pride. In any event, when movements happened at the end of the

Table 1: Type of Diet.

Type of Diet	General shift N=100	Rotation shift N=100	Total (%) N=200(100%)
Vegetarian	23	8	31 (15.5%)
Mixed vegetarian	77	92	169 (84.5%)

Table 2: Number of meals expended and food to workplace.

Number of meals expended and food to workplace	General shift N=100	Rotation shift N=100	Total (%) N=200	
Number of meals consumed per day	Two	9	16	25 (12.5)
	Three	90	83	173 (86.5)
	Four	1	1	2 (1)
Food to work place	Canteen food	12	28	40 (20)
	Packed lunch from home	88	72	158 (79.5)
	No food	-	1	1 (0.5)

Table 3: Meal skipping pattern.

Meal skipping pattern	General shift N=100	Rotation shift N=100	Total N=200 (%)
Yes	33	41	74 (37%)
No	67	59	126 (63)

Table 4: Type of meal skipping.

Type of meal skipping	General shift N=33	Rotation shift N=41	Total N=74 (%)
Breakfast alone	18	21	39 (52.7)
Lunch alone	10	17	27 (36.4)
Dinner alone	4	2	6 (8.1)
Breakfast, lunch	-	1	1 (1.3)
Breakfast, Dinner	1	-	1 (1.3)

Table 5: Frequency of meal skipping.

Frequency of Meal skipping	General Shift N=33	Rotation shift N=41	Total N=74 (%)
Daily	3	2	5 (6.7)
Once a week	5	2	7 (9.4)
Two to three times a week	12	20	32 (43.2)
More than three times a week	13	17	30 (40.5)

week, this achieved diverse food decisions than during the week, steady with the typical variety showed by the individuals who work a standard working week pattern (An, 2015) in Table 3. Our present research reported that more than one third (37%) of the study participants skipped meals. Among the meal skippers, 55% were Rotation worker and 45% were General shift workers. Work timing is the major cause for the skipping meal by rotation shift workers. People who hopped a mealtime are more

probable to eat foods covering high level of fat and carbohydrates and to have lower intakes of fruits, vegetables, vitamins and minerals than those who never skipped a meal. Further, those who skipped a meal faced amplified risks to their cardio metabolic health, notably of obesity and diabetes (Kong et al., 2019) in Table 4. According to the above table, meal skipping is found to be more among rotation shift workers than General shift workers. Breakfast is the most common meal skipped by both the group

(52.7%), followed by lunch (36.4%) and dinner is skipped by 8.1% participants. Breakfast is considered as the “brain food”, but it is skipped by the majority of the participants. Being diabetics, it must be emphasized to consume all the three meals especially breakfast to maintain the blood sugar levels in Table 5. When the frequency of meal skipping pattern was analyzed, about 6.7% skipped meals daily. Among them 1.5% from General shift and 1% for rotation shift. About 9.4% skipped meals once a week (2.5% General shift workers and 1% rotation shift workers). 43.2% (6% general shift workers and 10% rotation shift workers) and 40.5% (6.5% general shift workers and 8.5% rotation shift workers) skipped two to three times a week and more than three times a week respectively.

CONCLUSIONS

Breakfast is “brain food” but our workers seem to skip meal, especially breakfast. It is firmly prescribed that businesses should find a way to build up sustenance the board procedure at the workplace. It is fundamental for the night move laborers to have breakfast before the rest to abstain from arousing because of appetite. Move laborers must stick as intently as conceivable to an ordinary “day and night design” of food consumption. Evading sugar-rich items, for example, sodas, pastry shop things, desserts, and non-fiber starch nourishment (high glycemic load) like white bread. Workplace bottle must furnish an assortment of food decisions with complete dinners and great snacks in sponsored rates. Flask should likewise provide suitable feasting offices which must permit a supper to be consumed from the workplace, with associates, in as charming an encompassing as could reasonably be expected. To prevent the micro vascular and macrovascular complications of diabetic workers, it is essential to main normal blood glucose levels by consuming balanced diet with sufficient sleep and regular exercises. It is the responsibility of the employer to provide a “health friendly” canteen to their employees in a subsidized rate. Proper nutritional habits would help to improve the health status of the individual which in turn improves productivity of the workers. This benefit both employer and employees and as well the nation. Nutrition education in terms of inclusion of right foods for diabetics and avoidance of unhealthy junk foods must be reinforced. Nutritional screening in terms of ruling out deficiency diseases also must be done regularly.

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Conflict of Interest

The authors declare that they have no conflict of interest for this study.

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