

Energy expenditure and intake of employed and non-employed urban women: a comparative study

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Introduction:

“Energy is needed to perform various activities of a day, and if energy-balance and body-weight are maintained, one can lead an active life with happiness and gay.”

Every act and moment of life involves transformation i.e., expenditure of energy. The energy requirement of an individual is the level of energy intake from food that will balance energy expenditure when the individual has a body size & composition, and level of physical activity consistent with long term good health; and that will allow for the maintenance of economically necessary and socially desirable physical activity. (WHO, 1985)

Method:

Participants:

The present study was undertaken to compare the energy expenditure and intake of employed and non-employed urban women residing in Udaipur city. Rajasthan. Forty employed and forty unemployed women, who were married, non-pregnant, non-lactating at the time of study and belonged to the age group of 25-40 years were studied. The non-employed women were solely housewives and were not doing any economically productive work, whereas employed women studied were schoolteachers i.e. engaged in financially gainful employment.

Assessments and Measures:

A questionnaire was developed to collect information of the subject and her family regarding education, occupation, income, family type, help obtained from family members and servants etc. The height and weight measurements of each subject were also taken.

A dietary survey was conducted for two consecutive days by using 24-hour recall method to find out the energy intake. The energy expenditure was calculated by time spent on various activities for two consecutive days. Minute to minute recording of various activities performed in 24 hours was made. The time spent on each activity and body weight of the subject and summation gave the energy expenditure of that day. The variation between energy intake and expenditure due to working status, type of family and nutritional status of subjects was tested statistically by using t-test.

The correlation between different variables viz. height, weight, age, energy intake and expenditure with each other was determined. Furthermore,

multiple regression analysis was done to assess the Energy expenditure & intake of employed & non-employed urban women 4 variations in body weight/energy expenditure due to variables such as height, weight and energy intake.

The result of the present investigation revealed that 97.5% subjects were Hindu and the remaining 2.5% were Muslims. The food habits of more number of employed women was vegetarian, while in the non-employed group, non-vegetarians were more as compared to the employed group. The educational status of employed women and of their husbands was comparatively better than non-employed women and of their husbands. The per capita income of two groups was not different, but more number of employed women were from higher income levels (mean \pm 1 S.D.). The occupational status i.e. business and service of husbands of two groups was not different.

Results:

The result revealed that the difference between mean daily energy intake of employed and non-employed women was not significant but the energy deficit in comparison to RDA was more (136 kCal) in employed women, while in non-employed women it was (+) 12 kCal. The difference in energy intake between two groups was of only 148 kCal ($p > 0.05$). While energy expenditure was significantly more (2418 kCal per day) by employed women than non-employed ones, because the mean time spent on the activities of various categories was also different in two groups. Employed women spent more time (484.2 min/day) on the teaching and other standing activities of III category than non-employed women, who were spending 358.8 min/day. While on the activities of I

category, which is the least energy expending activity the time spent was less by employed women than non-employed women. Energy expenditure & intake of employed & non-employed urban women 5 In the present study, the majority of the women belonged to nuclear families, but in comparison to non-employed women, more number of employed women had joint families. Energy intake of employed women was not affected by either of family type, but energy intake of non-employed women, who belonged to joint families was found to be the least i.e., 1845 kCal/day. The energy expenditure by type of family indicated that, in nuclear families, the employed women were expending significantly more energy than non-employed women, while in joint families, energy expenditure of non-employed women was comparatively more than that of employed women ($p>0.05$). The difference between energy intake and expenditure of employed women of nuclear families was significant ($p>0.01$), whereas in case of non-employed women of joint families, the intake and expenditure were significantly different ($p<0.01$). In non-employed nuclear family women, although the energy intake was greater than expenditure, yet the difference was not significant. On the basis of nutritional status, it was observed that the majority of employed (82.5%) and non-employed (70%) women were normal (i.e., who had more than 90% weight for height) and remaining were poorly nourished women. The comparison between intake and expenditure by working status along with their nutritional status showed that poorly nourished non-employed women had less energy expenditure than intake ($p<0.05$). On the contrary, normal employed women had more expenditure than intake ($p<0.01$). The relationship between different variables revealed that energy expenditure and body weight were positively correlated for both the study groups. The correlation between intake and expenditure/body weight was not significantly related for any group. The multiple regression analysis carried out to find the variations in energy expenditure due to variables like age, height, body weight, and energy intake revealed that 92.33% and 87.44% explained variations in energy expenditure was due to these above-mentioned variables for employed and non-employed women respectively. The F-value was found to be highly significant, when combined effect of all these

variables was determined. The maximum contribution to bring variations in energy expenditures was of body weight. The other variables were not materially influencing the expenditure either in the direct or indirect way. Similar results were obtained when body weight was taken as a dependent variable. The energy expenditure had maximum contribution for body weight for both employed and non-employed women.

Conclusion:

It can be concluded that energy expenditure is affected by working status and is not affected by energy intake.

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