Health profile of middle aged men and women residing in Bikaner city of Rajasthan

MADHU GOYAL, REEMA RATHORE AND VIMLA DUNKWAL

ABSTRACT: A study was conducted on 100 middle aged each male and female subjects residing in urban areas of Bikaner city (Rajasthan). The results revealed that 54 per cent of the male subjects were preobese (BMI 26-29.99 kg/m²) and 83 per cent of them had almost normal WHR (0.96-0.98). Among female subjects majority (59%) of them were found to be obese with 27.18 to 28.09 kg/m² BMI and 0.86 to 0.87 WHR. Blood pressure levels were found to be normal for both men and women. Majority of the male subjects (64%) had 12-13.9 mg/dl haemoglobin levels but majorities (78%) of women were found anaemic (9.55 g/dl to 10.44 g/dl Hb). The mean blood glucose level of men and women was found to be 127.7 ± 19.19 mg/dl and 114.26 ± 14.0 mg/dl. In case of men most of the parameters of lipid profile (Total cholesterol, Triglycerides, HDL-C, VLDL-C, TC/HDL ratio, LDL/HDL ratio) were above normal. Except triglycerides all the constituents of lipid profile in women were found to be within normal range. High prevalence of general obesity among both men and women and presence of anaemic condition in women emphasized urgent need for nutrition education amongst the subjects residing in the study area.

KEYWORDS: Obesity, Anaemic, Lipid profile, Triglycerides, Nutrition education


MIDDLE AGE IS A PERIOD OF LIFE WHEN AGING PROCESS STARTS. THERE ARE VARIOUS PHYSIOLOGICAL AND PSYCHOLOGICAL CHANGES ESPECIALLY IN WOMEN WHICH IN TURN AFFECT THEIR NUTRITIONAL STATUS. NATIVES OF RAJASTHAN HAVE DIFFERENT FOOD HABITS. DUE TO SCARCITY OF WATER AND AMPLE AVAILABLE OF CATTLE AND POOR CROPPING OF GREEN LEAFY VEGETABLES, AS PER SOCIAL PRACTICES AND CUSTOMS PEOPLE USE LARGE QUANTITIES OF FAT AND SUGAR TO PREPARE THEIR MEALS TO IMPROVE THE PALATABILITY OF FOOD.


RESEARCH METHODS

THE RESEARCH WAS CONDUCTED ON 100 MIDDLE AGED EACH MEN AND WOMEN RESIDING IN DIFFERENT URBAN AREAS OF BIKANER. THE SUBJECTS WERE SELECTED ON THE BASIS OF CONVENIENT
sensing technique.

**Collection of data includes:**

**Anthropometric parameters:**

Height (Cameron, 1978) and weight (Robinson et al., 1988) were measured for calculating their body mass index (BMI) (James et al., 1988). Along with this waist and hip circumference of the subjects were measured to calculate the waist hip ratio (WHR) to assess prevalence of abdominal adiposity (Jones et al., 1986).

**Biophysical assessment:**

Blood pressure of the subjects was estimated (Chatterjee, 1976).

**Biochemical assessment:**

- Haemoglobin level was estimated to assess the prevalence of anaemia with use of haemoglobinometer as described by Dacie and Lewis (1975).
- Blood glucose test was carried out with glucometer to assess the random blood sugar level (WHO, 2000).
- Lipid profile including serum cholesterol, serum triglyceride lipoprotein i.e. low density lipoprotein (LDL), High density lipoprotein (HDL) and very low density lipoprotein (VLDL) cholesterol were estimated for all the subjects as per the process adopted by Thyrocare Technologies Ltd. (http://www.charbi.com).

**RESEARCH FINDINGS AND DISCUSSION**

The results of the above study revealed that the mean weight of male and female subjects was higher than the reference standard weight. Most of the male and female subjects were diagnosed as pre obese on the basis of BMI classification given by WHO (2000) indicating health risk for them. The mean waist-hip ratio for male subjects was within normal limit i.e. >1 whereas for female subjects the mean WHR value was noted to be slightly higher than the standard value (<85) pointing towards greater health risk (Table 1). Kuczmarski (1989) also reported that with aging, centralization and internalization of body fat occurs, therefore, measurement of adipose tissue on the trunk becomes better predictor of overall fatness.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Men Mean ± S.D.</th>
<th>Women Mean ± S.D.</th>
<th>Standard value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height (m)</td>
<td>1.69 ± 0.062</td>
<td>1.55 ± 0.043</td>
<td>1.71 1.52</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>77.6 ± 10.32</td>
<td>65.63 ± 10.30</td>
<td>60 50</td>
</tr>
<tr>
<td>BMI (kg/m²)</td>
<td>27.1 ± 3.41</td>
<td>27.18 ± 3.77</td>
<td>18.50 24.99</td>
</tr>
<tr>
<td>WHR</td>
<td>0.97 ± 0.031</td>
<td>0.86 ± 0.14</td>
<td>1.0 0.85</td>
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</tbody>
</table>

Table 2 reveals that the mean values of systolic and diastolic blood pressure was within normal limits for both men and women. The subjects were not found to be suffering from abnormalities of their blood pressure.

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<th>Standard value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systolic (mmHg)</td>
<td>129.5 ± 5.93</td>
<td>125.9 ± 7.50</td>
<td>&lt;140 &lt;140</td>
</tr>
<tr>
<td>Diastolic (mmHg)</td>
<td>84.6 ± 6.66</td>
<td>85.15 ± 5.02</td>
<td>&lt;90 &lt;85</td>
</tr>
<tr>
<td>Haemoglobin (g/dl)</td>
<td>13.64 ± 0.81</td>
<td>9.99 ± 1.77</td>
<td>14-15 &gt;12</td>
</tr>
<tr>
<td>Blood glucose level (mg/dl)</td>
<td>127.7 ± 19.19</td>
<td>114.26 ± 14.0</td>
<td>&lt;200 &lt;200</td>
</tr>
</tbody>
</table>

Level of hemoglobin of an individual is widely used as an index for the assessment of nutritional status, because its synthesis is sensitive to the deficiency of several nutrients such as protein, iron, vitamin C and folic acid (Phadnis and Chandrashkeharan, 1972) and it is dependent on healthy food practices (Anderson et al., 1982). During present investigation the male subjects were found to be having slightly lower Hb levels when compared to the standard values. Most of the women were anemic as the mean Hb values for women were noted to be 9.99g/dl which is less than standard value (Table 2). Almost similar haemoglobin status (7-10.5 g/dl) was also reported by Arora (1994) while studying nutritional status of middle aged women (40-60 years) residing in Punjab.

Blood glucose level is an important determinant of the healthy status of a person. According to Shetty (1997), adults have a major risk factor for NIDDM. Results of the present study indicated normal blood glucose level of all the subjects. The results of the present study are in harmony with the study of Mayer et al. (2005) in which similar range of blood glucose i.e. 97.8±2.04 to 150.2±6.64 mg/dl was observed in menopausal subjects residing in urban areas of Tetagarh, U.P.

Table 3 indicates that all the male subjects had their serum cholesterol at “borderline high” level whereas all the female subjects were having normal cholesterol level. The serum triglyceride level of male and female subjects was found to be higher 176.2±86.5 to 191.6±103.9 when compared with standard value <150mg/dl suggested by...
Raghuram et al. (2000). The results are in concordance with Brennan (1985), who also found such results.

HDL-C and LDL-C was found within normal level for male and female subjects. In conformity with present findings Singh et al. (1994) also observed non-significant difference in HDL-C levels among 463 adult women receiving normal diet. According to Table 3, in male subjects high ratio of TC/HDL and LDL/HDL indicates that there was high level of bad cholesterol (LDL) but lower level of good cholesterol (HDL) which shows increase risk of heart disease. In female subjects all values of VLDL-C, TC/HDL and LDL/HDL ratio were found to be in normal range.

Results indicate that regional and socio-cultural difference affect greatly the dietary pattern as excess intake of fat/oil and sugar/jaggery and low intake of iron led to obesity and anaemia. So, there is a need of nutrition education to the subjects regarding importance of balanced and low fat diet.

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■ REFERENCES


■ WEBLIOGRAPHY