Abstract

Objective: To evaluate the frequency of overweight and obesity in health professionals, before and after a single specialized dietary recommendation.

Methods: Anthropometric measures of 579 workers of a general hospital in the city of São Paulo, Brazil were taken. The weight (f), height (h) and waist circumference (wc) were interpreted according to the WHO and NCEP ATP III guidelines. Nutrition specialist provided dietary and behavioral recommendations. The entire sample underwent a new evaluation one year later.

Results: At the first evaluation, 79 employees presented WC ≥ 102 cm (male) or WC ≥ 88 cm (female). The association between WC ≥ 102 cm (men) or WC ≥ 88 cm (women) and BMI ≥ 30 kg/m² was found in 12.8% (69 subjects). The BMI distribution per age group indicated that the increase in overweight and obesity was directly proportional to the age increase. Physical activities were not practiced by 75% of the subjects studied. A year later, the evaluation indicated lack of statistical differences regarding the BMI and waist circumference of the sample and only 2.8% started to practice a physical activity.

Conclusion: Dietary recommendation alone failed to promote changes in the eating habits of health professionals who work at a general hospital or to encourage them to practice exercise.

Key words: Nutrition intervention. Obesity. Waist circumference. BMI (Body Mass Index). Overweight.
Introduction and Objectives

Obesity is an endocrine-metabolic, chronic, heterogeneous and multifactorial condition, marked by excess body fat.\textsuperscript{1,2} Results of epidemiologic studies carried out over the last decade indicate that obesity is an important condition that predisposes increased morbidity and mortality.\textsuperscript{3-6} The relative risk for cardiovascular diseases and the metabolic syndrome significantly increases with abdominal obesity, defined as waist circumference larger than 102 cm for men and 88 cm for women.\textsuperscript{7}

The prevalence of obesity is increasing in developed and developing countries.\textsuperscript{8} In Brazil, its prevalence increased between 1975 and 1997. Today, it is estimated that 40% of Brazilian adults are overweight, 13% of which are obese. In the city of São Paulo, 45.3% of the men and 36.2% of the women are overweight and 10.3% and 13.2% are obese respectively.\textsuperscript{9} Some population-based strategies were designed as an attempt to curb this true epidemic, such as comprehensive public policies. In 2007, the Brazilian Ministry of Health established the Núcleos de Apoio à Saúde da Família (Centers to Support Family Health) that aim to promote healthy diet and actions related to programs to manage and prevent nutrition disorders such as overweight and obesity.\textsuperscript{10} Additionally, private initiatives were developed. They are considered public actions to encourage the increase in the practice of physical activities and knowledge about the benefits of an active lifestyle.\textsuperscript{11}

The positive impact of such actions led to the development of other programs acknowledged by the World Health Organization (WHO) in Brazil and abroad. Health professionals and administration workers of a hospital are supposed to have more access to information and a better perception about obesity related risks. This study was designed to evaluate the frequency of overweight and obesity in professionals who work at a general hospital in Brazil. All participants were evaluated and received nutrition and behavior recommendations together with a leaflet to improve their eating habits and encouragement of their eating habits.\textsuperscript{12}

Materials and methods

Prospective, non-controlled study conducted at a general hospital with 1920 beds in the city of São Paulo, Brazil. The São Joaquim da Real and Benemérita Sociedade Portuguesa de Beneficência de São Paulo hospital has 6,712 employees, including physicians, dietitians, biomedical specialists, physical therapists, the nursing team, messengers, administrative clerks, facility and management employees.

In August 2006, leaflets and posters were distributed to stimulate and to invite health professionals to volunteer and participate of a nutritional and behavior assessment that would take place in the following month. This program was opened by a lecture on Nutrition and Quality of Life, focusing on the evidence that the diseases that are responsible for higher mortality rate can be prevented or that the mortality rate can be decreased with proper diet and behavior.

In the first phase of the study, 579 employees were evaluated. A questionnaire with personal data, height, eating habits (24-h recall), practice of physical activities, pre-existing conditions, use of medications and results of diagnostic tests (whenever applicable, ie, most recent result for blood glucose for diabetic subjects) was applied to each individual. The waist circumference (WC) in centimeters was measured by a nonstretchable tape; the weight (f) in kilograms and the height (H) in centimeters were provided by the sample. The BMI was calculated as recommended by the 1995 WHO guidelines.\textsuperscript{13}

A dietitian provided counseling to all participants identified as overweight or obese based on their body mass index (BMI). The recommendations included improvement of their eating habits and encouragement of regular practice of physical activity targeting weight loss. All participants received a hard copy of the recommendations together with a leaflet to improve their eating habits based on the Brazilian food pyramid.\textsuperscript{14}

All the data obtained were stored in a data base (Excel\textsuperscript{\textregistered}-Microsoft). Patients were considered either overweight or obese based on their BMI and WC following the guidelines of the WHO\textsuperscript{15} and the National Heart Lung and Blood Institute of the USA-NHLBI (ATP-NCEP III).\textsuperscript{16}

One year later, the same subjects were invited for a reassessment. Their body weight and waist circumference were measured again at this second phase. Participants filled a self-assessment questionnaire related to the suggestions proposed at the previous recommendation.

Results and discussion

At the first phase of this study, 583 employees participated (11.5% of the total number of hospital employees)
Nutritional recommendation in obese health professionals

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An article discussing nutritional recommendations for obese individuals. The article highlights that 78 individuals (13.49%) presented overweight, suggesting that women are more concerned with weight loss than men. Other studies show that many individuals wish to lose weight, particularly women (39.6% vs 3.8%), although approximately half of the sample of both genders wished to lose weight, suggesting that women are more concerned with weight loss than men. Other studies show that many women are concerned with weight loss, particularly that overweight.

As for population strategies of health promotion, the major challenge is the adherence of the target population to the programs proposed. A multicenter strategy for weight management and obesity prevention at the workplace is being carried out by the American National Heart Lung and Blood Institute in 114 companies, reaching approximately 48,000 employees. The adherence to the program ranges between 16% and 81% in different American states.

The 3W program (Work, Weight and Wellness Program), conducted at 31 hotels in Hawaii, USA, 39% mean of almost 12,000 employees adhered to the changes proposed in lifestyle and eating habits.

In this study, despite passive and active attraction of respondents, it is worth mentioning that only 11.5% of hospital professionals participated. A possible reason to explain the low response rate is the fact that there was a low adherence of physicians and head nurses, and in general the active participation of leaders would encourage other employees.

At the first phase, all subjects claimed to be sedentary, in accordance to other studies that indicated that most adults do not engage in exercise to the extent in which it would promote health; this scenario did not present any significant change after the intervention. A study conducted by Monteiro et al. revealed that 13% of Brazilians report to practice at least 30 minutes of physical activity at least once a week and only 3.3% practice it at least five days a week.

There was an 82.6% decrease in the number of participants in the second phase of the study and results did not change. The model and intensity of the nutritional intervention did not trigger the interest of health professionals in a general hospital. It also failed to promote changes in eating habits and/or weight loss, and to stimulate the practice of regular physical activity. These poor results can be explained by the fact that there was a single consultation in which regular exercise was recommended, without any strategy detailed plan, because the team did not have the help of specialized professionals. The most efficient strategies for weight loss and weight management in the short and the long term are those that combine recommendations regarding diet and physical activity.

On the other hand, the single intervention model, without period follow-up seems to be inadequate to foster significant changes that promote weight management. The Counterweight Programme, carried out in England, with 1,256 obese patients revealed that the frequency of consultations with the multidisciplinary team is essential for a successful strategy –43% of patients that attended 12 appointments in 12 months attained the goal (at least 5% of weight loss in the same

<table>
<thead>
<tr>
<th>Age group</th>
<th>25.0 ≤ BMI ≤ 29.9 (kg/m²)</th>
<th>BMI ≤ 30.0 (kg/m²)</th>
<th>WC &gt; 102 or WC &gt; 88 (cm)</th>
<th>BMI ≥ 30.0 + WC &gt; 102 or WC &gt; 88</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-30 years</td>
<td>n = 61</td>
<td>n = 21</td>
<td>n = 32 (f)</td>
<td>n = 15 (f)</td>
</tr>
<tr>
<td>31-40 years</td>
<td>n = 76</td>
<td>n = 21</td>
<td>n = 48 (f)</td>
<td>n = 1 (f)</td>
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<tr>
<td>41-50 years</td>
<td>n = 34</td>
<td>n = 19</td>
<td>n = 32 (f)</td>
<td>n = 2 (f)</td>
</tr>
<tr>
<td>&gt; 50 years</td>
<td>n = 16</td>
<td>n = 14</td>
<td>n = 21 (f)</td>
<td>n = 1 (f)</td>
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<tr>
<td>Not available</td>
<td>n = 3</td>
<td>n = 2</td>
<td>n =</td>
<td>n =</td>
</tr>
</tbody>
</table>

(Encyclopedia of Nutrition, 2006, 3/4)

(Encyclopedia of Nutrition, 2006, 3/4)
period) vs 34% that did not attend all consultations. An Australian randomized, controlled study with patients receiving antipsychotic medication associated with weight gain (up to 7 kg in the first three months of treatment) presented good results with the nutritional intervention model—the group that received nutrition and behavior recommendation for six hours in three months had a weight increase that was significantly lower than the control group (mean of 2 kg vs 6 kg). The weight gain also affected a smaller percentage of patients (13% vs 64% in the control group). The world epidemics of obesity calls for the attention of all society and government sectors, and health professionals can contribute establishing new potential actions. Based in this study, we suggest actions that can improve the increasing number of regular visits; enhance the engagement of the health community working with group leaders who can be role models to be followed and finally, changing the work environment (changes in menus of the cafeteria and coffee shop, limit the consumption of processed foods, encourage exercise establishing partnerships with health clubs or programs that promote gymnastics at work) in order to promote and facilitate the adoption of a healthier lifestyle.

References

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Table III

Percentage of overweight/obese participants versus age groups

<table>
<thead>
<tr>
<th>Age group</th>
<th>N</th>
<th>25.0 ≤ BMI ≤ 29.9 (kg/m²)</th>
<th>BMI ≥ 30.0 (kg/m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-30 years</td>
<td>255</td>
<td>23.90%</td>
<td>8.23%</td>
</tr>
<tr>
<td>31-40 years</td>
<td>181</td>
<td>41.90%</td>
<td>11.60%</td>
</tr>
<tr>
<td>41-50 years</td>
<td>88</td>
<td>38.63%</td>
<td>21.59%</td>
</tr>
<tr>
<td>&gt; 50 years</td>
<td>54</td>
<td>29.62%</td>
<td>25.92%</td>
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<tr>
<td>Not available</td>
<td>2</td>
<td>0</td>
<td>0</td>
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