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SHORT COMMUNICATION

Management Strategy of Obesity in the Public Health System: Proposal of a New Model to Optimize Human Resources and Patient's Motivation

Massimo Pellegrini¹, Michael Kob², Rita Trovato², Marion Schrei², Valentina Corazzini², Nicoletta Facchin², Marianonietta Mazzoldi³ and Lucio Lucchin^{2,*}

¹Department of Diagnostic, Clinical and Public Health Medicine, University of Modena and Reggio Emilia, Via Campi 287, Modena, 41125, Italy & Azienda Usl of Reggio Emilia - IRCCS, Via Amendola, 2 - 42122 Reggio Emilia, Italy

²Dietetic and Clinical Nutrition Unit, Health District of Bolzano, Lorenz-Böhler Street 5, Bolzano, 39100, Italy

³Clinical Psychological Unit Health District of Bolzano, Lorenz-Böhler Street 5, Bolzano, 39100, Italy

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Abstract:

Introduction:

Obesity, a disease characterized by an excess of adipose tissue, is a worldwide issue of growing interest in public health.

Methods:

The multifactorial etiology and pathogenesis of obesity strongly orient the scientific community in considering it as a chronic disease without an effective therapy that works for all patients affected by this clinical condition. This leads to a proliferation of non-scientific and dangerous treatment proposals and fake news. The Dietetic and Clinical Nutrition Unit at Bolzano Hospital in Italy has adopted a new strategy based on transparency to optimize time for the first visit and particularly to increase patients' knowledge and motivation.

Results:

This new strategy provides a preliminary consultation between patients who ask for a nutritional examination and a clinical team composed of a clinician, a dietician and a psychologist. We discuss the preliminary results obtained during the period between February 2010 and March 2016.

Keywords: Obesity, Public health system, Adipose tissue, Clinical Nutrition, Aetiology, Pathogenesis.

1. INTRODUCTION

Obesity is a disease characterized by an excess of adipose tissue due to the mutual interaction of several genetic, metabolic, psychological and environmental factors which involves complex neuronal and hormonal patterns. This multifactorial aetiology and pathogenesis strongly orient the scientific community in considering obesity as a chronic disease and not just a risk factor *per se* [1 - 7]. Furthermore, this chronic condition has doubled since 1980 and numbers constantly increase [8 - 26]. In 2016, the World Health Organization (WHO) estimated that more than 650 million adult people in the world were obese, corresponding to about 13% of the adult population [27]. Based on data from Italian National Institute of Statistic (ISTAT) published in 2016, in Italy 5.4 million individuals are obese, corresponding to 10.4% of the adult population [28]. Given the complexity of the pathogenesis of this disease, in which bio-psycho-

* Address correspondence to this author at the Dietetic and Clinical Nutrition Unit, Health District of Bolzano, Lorenz-Böhler Street 5, Bolzano, 39100, Italy; Tel: +39 0471 908545; Fax: +39 0471 908707; E-mail: lucio.lucchin@sabes.it

social factors interact with each other, we still do not have an effective therapy that works for all patients. Moreover, it is difficult to precisely predict obesity evolution considering that: a) obese patients' expectations in terms of weight loss are often too high and unrealistic (weight loss of more than 20-30% of their initial body weight) partially due to lack of communication between patient and clinician, to the economic interests of the diet industry and to the fake news about nutrition [29, 30]; b) the drop-out rate from obesity treatment programs is very high [31], with a mean rate of 30-40% within the first year reported in intervention trials [32], and with an attrition rate associated with poorer therapy outcomes [33 - 35]; c) in the Italian Public Health System, the reduction of resources implies cost-effectiveness optimization with an average visit time for an obese patient lasting between 20 and 30 minutes, less frequent check-ups and inadequate time to motivate a lifestyle change [36 - 38]; d) there is a negative stigma associated with obesity that is still too high and that patients should be preliminarily relieved about their condition [39].

It is strategic to communicate preliminarily the treatment plan to the obese patient in order to limit the disorientation and the attraction towards the commercial therapeutic illusions and towards unqualified professionals. For this reason, obese patients may experience negative consequences, both psychologically and clinically. Physicians, *in primis*, and the other health workers who are involved in the treatment of this clinical condition, have the ethical and deontological need to explain their professional background, besides the intervention model that they are willing to adopt [40]. The Italian legal system requires transparency of services as a given criterion, (Ministerial Decree 19th May 1995 Official Journal number 125, "General reference framework of Public Service Charter"). Even though this document is addressed to healthcare companies, it is desirable to disseminate it to the single operative units that deal with chronic pathologies. In order to explain preliminarily the treatment to the obese patient, it is desirable to communicate: 1) entity, organisation chart and qualifications of the operators; 2) way of access into the structure; 3) privacy safeguard; 4) quality standards of the Unit (number of treatments per year, drop-out rate after 6/12/24 months, average weight loss after 6/12/24 months, *etc.*); 5) therapeutic model used with the relative informed consent [41].

Before starting a treatment for obesity, detailed information about the contents of this treatment should be given. This part takes about 10 minutes during the first visit. As this preliminary information is the same for all the obese patients, an initial group meeting with all the subjects who require a visit during the same period may result useful to save time.

Based on the clinical experience of specialists, and also from our experience, the average time should last between 45 and 75 minutes for the first medical examination and between 20 and 30 minutes for subsequent medical checks. It is important to remember to plan how much information has to be given, remembering that each patient memorizes just a little percentage of what doctor says. It has also to be taken into consideration that attention level is at its lowest after 30 minutes of speech and patients tend to forget 40%-60% of medical warnings in a couple of days. Repeating the principal concepts, remembered information grows up to 30% [42]. It is important not to give too much information at one time. Besides, it is important to remember that the patient wants to be more informed about lifestyle modifications and about the prognosis of the disease [43].

With the aim of improving the obesity treatment program and optimizing available time and resources, the Dietetic and Clinical Nutrition Unit at Bolzano Hospital, Italy (International Quality Management System Standard UNI EN ISO 9001 certification by Lloyd's Register since 1995) has devised a new operative strategy to ensure clarity and to provide obese patients with adequate and correct information about the therapeutic plan. The proposed strategy provides a monthly multidisciplinary preliminary group meeting in which a clinician, together with a dietician and a psychologist, illustrate the different treatment phases to groups of patients who have scheduled a nutritional examination in the previous month. For this meeting, patients do not pay a ticket. Before the group meeting, each patient receives the Unit's Services Booklet (used since 1997 in our Unit and currently at its VII edition) containing transparency's information and a questionnaire to define the urgency level. These preliminary meetings, addressed to about 250 new patients every year in our experience, aim to achieve a superior therapeutic adherence and a better weight loss maintenance in the long term by showing obese patients the therapeutic pathway they should follow and by encouraging them to approach it.

2. PATIENTS AND METHODS

Since February 2010, all obese patients who have required visit/treatment for obesity at our Unit for the first time, have been invited to an obligatory group meeting, which takes place monthly and lasts an average of 75-85 minutes, the first 30 minutes of which are dedicated to the administration of tests for the assessment of obesity and eating disorders-related behaviours and for the assessment of psychosocial variables. The meeting contents are listed in Table 1.

Table 1. Major topics of the preliminary consultation.

Significance and goals of the preliminary group meeting
The main causes of obesity and the effects of weight reduction during the planned diet
The natural history of obesity and weight loss journey to be taken (pitfalls, relapse, duration and the necessity of a proper guide)
The importance of regular check-ups
The miracles diets
Health Care models provided by the Operating Unit
Treatment costs and payment methods
Causes of treatment interruption

Briefly, during the meeting, a qualified team composed of a physician, a dietitian and a psychologist, illustrates to the participants the physiology of obesity, the techniques to obtain weight loss, the challenges to face in achieving weight reduction and the obstacles to maintain it. Patients are encouraged to focus on their goals of weight reduction and lifestyle change.

The following tests are dispensed during the meeting: a) *Hospital Anxiety and Depression (HADS) scale* [44, 45]: to assess general anxiety and depression; b) *36-Items Short Form Survey (SF-36)* [46]: a psychometric questionnaire that allows patients to describe perceived health; c) *Binge Eating Scale (BES)* [47]: to assess binge eating behavioural disorders; d) *SIO-Obesity correlated disability (TSD-OC) test* [48, 49]: for obesity-related disabilities conceived by the "Italian Society of Obesity" (SIO); e) a general *Grading Test* for the group consultation.

Demographic data, anthropometric measurements, results from psychometric and grading tests and clinical information about therapeutic adherence were retrospectively reviewed. Means and standard deviations were calculated for each item using LibreOffice Calc software version 5.1.2.2.

3. RESULTS

During the period between February 2010 and March 2016, a total of 1501 people have required a dietary intervention for obesity at the Dietetic and Clinical Nutrition Unit of Bolzano Hospital, with an average of 22.7 (SD \pm 4.2) requests *per* month (corresponding to the total number of obese patients who schedule a medical examination in our Center every month).

After the first visit schedule, only 87 people out of 1501, equal to 5.8%, have not attended the preliminary meeting. During the considered period, of the final 1414 meeting participants, only 112, representing 7.9% of the total, have not attended the medical examination.

Demographic and anthropometric characteristics of these patients are listed in Table 2.

Table 2. Baseline characteristics (means \pm SD) of the patients.

Patients (n=1414)	Mean \pm DS
Age (years)	50.7 \pm 13.3
Weight (kg)	103.6 \pm 17.9
BMI (kg/m ²)	37.5 \pm 5.5
Male sex (%)	37.0

The psychometric tests summary results are listed in Table 3. Tests from 110 patients were not assessable, equal to 9.4% of the total.

Table 3. Results of psychometric and disability assessment tests.

Test (n=1304)	Result
HADS Anxiety Scale HADS Depression Scale	42.5% positive for anxiety and 40.5% for depression
BES	26% positive for BES
36-Items Short Form Survey	30% positive for pain discomfort
TSD-OC	30% positive for obesity-related disability

Preliminary group session are shown in Table 4.

Table 4. Patients' evaluation (ratings 1 to 5, means \pm SD) of the preliminary group session.

Grading Test (n=1395)	Mean (X/5) \pm DS
Clarity of explanation	4.8 \pm 0.6
Grade of interest	4.6 \pm 0.7
Quality of the teaching materials	4.4 \pm 0.9
Adequacy of time	4.6 \pm 0.7
Acquired knowledge level	4.4 \pm 0.9

These data clearly show that preliminary meetings have raised a high grade of interest (4.6/5) leading to a higher level of knowledge about weight loss issues.

CONCLUSION

Our strategy clearly suggests that the activation of a group session at the beginning of the obesity treatment is an effective procedure related to the transparency in the cure that brings to a better awareness and a greater motivation experienced by patients. Only a few patients have refused to participate in the meetings and these subjects probably look for a rapid or miracle-working method, showing a poor motivation. On the contrary group meeting, participants manifest to appreciate this not conventional approach to a specialized visit in a Public Service (Table 4).

Thanks to the group session, the time needed for the first individual visit was reduced from an average of 60 minutes to 45-50 minutes (the time needed to explain preliminary information) without compromising the quality of the consultation.

To understand if this strategy has had positive consequences during the course of therapy, we have examined the drop out range before and after the start of the group sessions.

In the period between 2007 and 2009, the mean drop out rate has been 23,3% after 6 months, and 40,6% after 12 months (691 patients). From February 2010 (when the group sessions have started) to March 2016, the mean dropout rate has been 16,40% and 29,80% respectively at 6 months and 12 months. This reduction of about 6% in dropout rate could correspond to those poorly motivated patients who choose not to follow the therapeutic plan.

Moreover, the percentage of those who have had a weight loss of $\geq 4\%$ after 6 months of treatment was 43.6% vs 45,8% for those patients who have started the treatment before 2010. The average weight loss after 6 months was 6,7 \pm 5,23 kg (n=1414).

Furthermore, this new approach results in savings resources for the Public Health System due to a higher percentage of patients who are really motivated to undertake the weight loss path, with a decrease in the number of unmotivated overweight and obese people feeding outgoing cases.

We believe that this new therapeutic approach could be useful to increase transparency and show ethics in nutritional treatment to patients as well as it could be useful for clinicians to optimize time in the management of obese patients' first examination.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Not applicable.

HUMAN AND ANIMAL RIGHTS

No animals/humans were used for studies that are the basis of this review.

CONSENT FOR PUBLICATION

A written informed consent was obtained from all patients when they were enrolled.

CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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