

## REVIEW ARTICLE

# Multiprofessional Obesity Treatments in Brazil between 1990 to 2004: A Bibliographical Review

Mendes AA<sup>1\*</sup>, Magnani Branco BH<sup>2</sup>, Stadler MB<sup>4</sup>, Lopera Barrero CA<sup>3</sup>, Gaspar L<sup>4</sup>, Matsuo AR<sup>4</sup>,  
Simões CF<sup>4</sup>, Baldino Garcia NC<sup>4</sup>, Takeda Violin DY<sup>4</sup>, Lopes WA<sup>1</sup> and Nardo N<sup>1</sup>

<sup>1</sup>Professor, Department of Kinesiology, State University of Maringá, Brazil

<sup>2</sup>Professor, Department of Kinesiology, Unicesumar - Campus Maringá, Brazil

<sup>3</sup>Professor, Department of Kinesiology - University of Tolima, Colombia

<sup>4</sup>Student of postgraduate, University of Maringá, Brazil

**\*Corresponding author:** Mendes AA, Professor, Department of Kinesiology, State University of Maringá, Brazil, Tel: 55.44.988016382, E-mail: profanselmo1@gmail.com

**Citation:** Mendes AA, Magnani Branco BH, Stadler MB, Lopera Barrero CA, Gaspar L, et al. (2018) Multiprofessional Obesity Treatments in Brazil between 1990 to 2004: A Bibliographical Review. J Nutr Obes 1: 103

**Article history:** Received: 09 March 2018, Accepted: 24 May 2018, Published: 28 May 2018

## Abstract

The objective of this work was to verify the scientific production on multiprofessional treatments of obesity from 1990 to 2004, in the databases Scielo, Lilacs and PubMed.

**Methods:** This research followed the model of bibliographic review and used as descriptors for the search Multiprofessional intervention of obesity; Multidisciplinary obesity intervention; Multidisciplinary obesity treatment; Multiprofessional obesity treatment; Multidisciplinary treatment of obesity; Multiprofessional treatment of obesity. The searches were conducted on the sites of Lilacs, Medline/ PubMed, and SciELO, between the years of 1990 and 2004. We found 235 articles in research bases used and, after applying the inclusion and exclusion criteria, were selected as eligible 1 article that composed the final analysis. This included article evaluated a model of intervention performed by a multiprofessional team of treatment of obesity in Brazil.

**Results and conclusion:** based on the research carried out it is evident that the multiprofessional studies of treatment of obesity were incipient from 1990 to 2004.

**Keywords:** Obesity; Behavioral Therapy; Multiprofessional Treatment

## Introduction

Overweight rates among the population have increased significantly in recent decades, both in developed countries and the United States with about 35% of obese, and in developing countries, such as Brazil where the prevalence of obesity has increased in the last twenty years in all age groups [1]. According to data from IBGE (2009), 36.6% of Brazilian children were overweight and 16.6% were obese, while the number grows exponentially also in adolescents, but at a slower pace, where, around 5, 9% of adolescents are obese. Data from VIGITEL (2014) indicate that 52.5% of Brazilians are overweight; such an index was 43% in 2006 in relation to obesity, 17.9% of the population is in this state [2,3].

According to Fisberg (1995) obesity is classified as the accumulation of fatty tissue, located throughout the body, caused by nutritional changes, genetic factors or by endocrine-metabolic diseases [4]. Obesity is a risk factor for chronic diseases due to its harmful action, since it contributes to the development of comorbidities such as elevated blood pressure and serum lipids [5]. The concentration of predominantly abdominal fat is associated with higher metabolic changes that may increase the risk of ischemic cardiac diseases and diabetes than the higher fat concentration in the peripheral regions [6].

As a strategy, the Ministry of Health issued directives No. 424 and 425 of March 19, 2013, which aim to “prevent and treat overweight and obesity as the priority care line of the health care network of people with Chronic Diseases”. However, such Ordinances have not been put into effect so far. The Ministry of Health has also launched the Action Plan for Coping with Non communicable Chronic Diseases (DCNT). In Brazil, according to data from the Mortality Information System (2009), NCDs account for 72% of total deaths, a percentage that represents more than 742,000 deaths per year. The most common non communicable chronic diseases are cardiovascular diseases (31.3%), cancer (16.2%), chronic respiratory diseases (5.8%) and diabetes mellitus (5.2%), diseases directly linked to obesity [7].

According to the estimates up to the year 2025, Brazil will be the fifth country in the world in prevalence numbers and problems caused by obesity [8]. In Brazil, the high financial costs, the percentage of expenses and the high costs of hospitalizations associated with obesity are similar to those of developed countries [9]. Obesity stands out as one of the factors that most affects the health of the population.

In this respect, a significant portion of the increase in the prevalence of obesity can be attributed to the sociocultural aspects, since its causes may exert greater influence than the genetic factors, since the eating habits of friends and family can contribute to the acquisition of inappropriate habits, which leads to the onset of obesity [10].

With this growing scenario of overweight in the population, when verifying the literature on effective programs in the prevention and fight against obesity, it is verified that there is a gap about multiprofessional programs of treatment of the obesity in the period of 1990 to 2004. In this sense the objective of this systematic review was to verify the studies of the fight against obesity with multiprofessional design and its main outcomes from January 1990 to December 2004, in the scielo, lilacs and scielo databases.

## Methodology

The present work is characterized as a bibliographical review, which uses the literature as data source. The literature review integrates information from several studies conducted separately that may present conflicting and / or coincident results [11].

It was defined as the scientific question of this systematic review: "What studies to combat obesity with multiprofessional design and its main outcomes?"

The electronic databases used for literature review were: PUBMED / MEDLINE, LILACS and SciELO. The research was carried out with papers published between January 1990 and December 2004, using the following terms: "Multidisciplinary obesity intervention", "Multiprofessional obesity treatment", "Multiprofessional obesity treatment", "Multidisciplinary treatment of obesity" and "Multiprofessional treatment of obesity".

The inclusion criteria previously established were:

- 1) Be in Portuguese, English or Spanish;
- 2) Be original article or short communication with original data (short communication);
- 3) Study the fight against obesity with multiprofessional design;

Excluded were that works that:

- 1) Did not characterize a conventional model of intervention, with a multiprofessional approach;
- 2) Have been developed to promote the prevention of obesity;
- 3) Were published before or after the period 1990-2004.

The selection of the manuscripts was done in two stages:

- 1<sup>st</sup> stage: Analysis by titles and abstracts;
- 2<sup>nd</sup> stage: Analysis by complete articles.

After the identification of the works, the relevant information was highlighted as follows:

Table 1 - General data of the article: study, year of publication, origin, areas involved, subjects, gender, age and physical activity;

Table 2 - Main endpoints of the article: authors, age, anthropometric, biochemical, physical fitness, comorbidities, nutritional and psychological / social;

Table 3 - Multiprofessional treatment and effects on the lipid profile: total cholesterol, LDL cholesterol, HDL cholesterol and triglycerides;

Table 4 - Training model and protocol: author, duration, intensity, frequency, sex, dropout and control group.

Study	Year of publication	Origin	Areas Involved	Subjects	Gender	Age	Intervention Time	Intervention Model
Effects of Re-education in Eating Habits and Physical Activity on the Lipid Profile of Obese Teenagers	2002	Uninformed	Nutrition; Medicine; Nursing; Psychology; Physical education; pharmaceutical	25 young people	13 male and 12 female	12 a 18 years old	8 months	Reeducation of eating habits oriented physical exercise and Cognitive Behavioral Therapy.

**Table 1:** General profiles of the article included in this review [12]

## Results and Discussion

In order to verify the scientific production on multiprofessional treatments of obesity in the period from 1990 to 2004, after the data collection, and applying the inclusion and exclusion criteria, only 1 article was elected for analysis in order to compose this study. In table 1, we can analyze the general data of the selected study.

As a stand out, the article entitled “Group psychotherapy in patients with metabolic syndrome” was inaccessible for the removal of some information, as a method of critically comparing and evaluating an intervention, since, from the established criteria, only this foray presented by the scientific bases. Given this, and as can be seen in Table 2, only one study that met the inclusion criteria and was completely accessible.

Author	Age Range	Anthropometry	Biochemical Variables	Physical Fitness	Comorbidities	Nutritional variables	Psychological/ Social Variables
Akimoto, <i>et al.</i> (2002)	12 a 18 years old	BMI	Total Cholesterol, LDL, HDL and Triglycerides	***	***	***	***

Note = Not Evaluated

**Table 2:** The aims outcomes Author Age range Anthropometry Biochemical variables Physical fitness Comorbidities Nutritional variables Psychological / social variables [12]

The structuring of the work was guided by a reeducation of eating habits, together with physical exercises monitored, structured and with practical diversities, in order to reduce risk factors present in the participants’ body composition. The target audience consisted of 25 obese youth (13 men and 12 women), aged between 12 and 18 years. The intervention related to physical education was given by the activities of water aerobics, swimming, hiking and sports games.

The intervention time is also another trigger for the effectiveness of the accepted study program, presented 8 months of intervention.

Another factor to be highlighted focuses on the period in which these works of programs for the prevention and treatment of obesity are ongoing. Only in 2002 is the publication of a study of the genre focused on the theme. Table 2 shows data on the selected article and the observed outcomes

Author Age range Anthropometry Biochemical variables Physical fitness Comorbidities Nutritional variables Psychological / social variables

A study conducted in Brazil with a sample of 25 adolescents (12 to 18 years old) who were overweight or obese according to WHO criteria (1991), for this age group. The participants of the research were submitted to a multidisciplinary treatment, lasting 8 months, conducted by professionals in medicine, nursing, physical education, nutrition, psychology and biochemistry. The treatment protocol was composed of nutritional intervention and physical exercise practice. Regarding the nutritional aspects, a hypo caloric diet of 1900 kcal was administered, and every two weeks there was a group meeting in order to guide the participants in relation to good and healthy eating habits. The application of the physical exercises was performed by a professional of the area and happened twice a week. Each meeting lasted 1 hour and 30 minutes, and the exercises varied between general water activities, swimming, walking and sports games. In addition, participants were instructed to maintain diversified physical activities throughout the week as a complement to the program. Table 3 shows the impact of multiprofessional treatment on the subjects in the lipid profile.

	Base Line (%)	After treatment (%)	Value p
Total cholesterol	64	32	< 0,05
LDL cholesterol	12	8	> 0,05
HDL Cholesterol	28	12	< 0,05
Triglycerides	44	24	< 0,05

**Table 3:** Effects of lipid profile variables on multiprofessional treatment

Author	Duration	Intensity	Frequency	Gender	Dropout	Control Group
Akimoto, <i>et al.</i> (2002)	1h e 30 min	Not rated	Not rated	Male and female	No	No

**Table 4:** Intervention model [12]

For a better quality of life, decrease in morbidity and mortality, it is necessary to reduce the amount of body mass, especially fat in obese patients. In this context, physical exercise becomes an important alternative in the control and treatment of obesity and is directly related to the total energy demand induced by muscular work, associated with the adequate combination of frequency, intensity and duration of physical exertion [13]. Therefore, aerobic exercise becomes an excellent way to boost energy expenditure and control body weight, due to the increase in lipid oxidation [14]. Weight reduction, although not significant in some cases,

improved the lipid profile and reduced blood pressure. Such improvement can be attributed to the duration of ninety minutes of the interventions, which resembles the studies done by Donnely, *et al.* (2009) and Aguilar, *et al.* (2010) in which activities lasting ninety minutes in adolescents caused a reduction in BMI and Total Cholesterol [15,16]. It should be noted that physical activity in amounts over 60 minutes daily will provide additional health benefits and in cases of body weight reduction, quantities of 90 minutes may provide more efficient results [17].

The intensity of exercise was not objectively determined in the study, a factor that hinders its reproducibility. Twice weekly frequency did not appear to be sufficient, corroborating a study by Berntsen, *et al.* where after five months of intervention in adolescents aged 7-17 years, only observed a reduction in fat percentage [18]. According to the authors due to their multifactorial etiology, the treatment of Obesity can promise greater benefits if carried out through a Multiprofessional strategy, corroborating with Lofrano-Prado, *et al.* who, after six months of multiprofessional intervention, observed a significant reduction in BMI and body weight in girls and boys, a fact that remained after one year of the same intervention process. In order to achieve therapeutic success, a treatment program involving a multidisciplinary team should be developed to develop a close relationship with the American Dietetic Association; (Canadian clinical practice guidelines on the management and prevention of obesity in adults and children) [19,20].

The realization of Cognitive Behavioral Therapy as well as the intervention in the family life style favored the adherence to the Program and consequently in the results obtained by reducing the caloric intake and increasing the practice of physical activities. According to Abreu (2003), Cognitive Therapy has demonstrated efficacy by working from the operant structure of the patient, aiming to organize the contingencies for weight changes and behaviors, in principle, related to self-control of eating behaviors, and broad situational context, deepening for all the discomfort [21].

The family contributed significantly to changing habits and lifestyle. The performance of parents in Obesity Treatment programs seems to be a determining factor, according to the study by Gustafson, *et al* who, through a review of thirty four studies, observed an association between parents' influence and levels of physical activity in adolescents [22-24]. It was observed that some bias compromised the results of the interventions so that the absence of results presented, mainly on the reduction of body weight from the gender, made it impossible to separate the influence of the treatment in question and the physiological factor, since the sexual development that occurs during adolescence promotes endocrine metabolic changes that influence the distribution of body fat in both boys and girls Malina; Bouchard (2002) [25,27]. However, the noncompliance of the Complementary Program proposed for the weekends to adolescents and parents impaired the volume of the Physical Exercise Program, as well as low acceptance of the walk by the adolescents [28-30].

## Conclusion

In the period from 1990 to 2004, only one article was observed in the main research bases indexed by the inclusion and exclusion criteria adopted in the present study. The results showed the effectiveness of the multi professional treatment program for obesity in hemodynamic factors and body composition. Variables such as intensity, dropout, physical fitness, and comorbidities, nutritional, psychological and social variables were not evaluated.

It is clear that since this is an earlier period, few studies have focused on studying the disease that would become the 21<sup>st</sup> century pandemic. The growing number of studies that currently focus on this theme denotes the concern of researchers and public policies for health in restraining the one that is the greatest challenge to all overweight nations and with it the chronic non-communicable diseases, major causes of death today.

## References

1. Carla BN, Ricardo MB, José ES (2006) Clinical treatment of obesity. *Medicine* Ribeirão Preto 39: 246-52.
2. Brazilian Institute of Geography and Statistics. Family Budget Survey 2008-2009. Rio de Janeiro IBGE.
3. Ministry of Health (2014) Surveillance of Risk Factors and Protection for Chronic Diseases by Telephone Inquiry, Brazil.
4. Fisberg M (1995) Obesity in Childhood and Adolescence. São Paulo: BYK Foundation.
5. Guedes DP (1995) Physical Exercise in Health Promotion - Londrina: Midiograf.
6. Hauner H, Stangl K, Schmatz C, Burger K, Blömer H, et al. (1990) Body fat distribution in men with angiographically confirmed coronary artery disease. *Arteriosclerosis* 85: 203-10.
7. Ministry of Health (2011) Ministry of Health launches national plan to reduce deaths from chronic non-communicable diseases, Brazil.
8. Romero CEM, Zanesco A (2006) The role of the hormones leptin and ghrelin in the genesis of obesity *Nutri Camp* 19: 44-9.
9. Sichieri R, Nascimento SD, Coutinho W (2007) The burden of hospitalization due to overweight and obesity in Brazil. *Cadernos De Saúde Pública* 23: 7.
10. Cyrino ES, Nardo N (1996) Grants for the prevention and control of obesity. *Rev Bra Ativ Fis* 1: 15-25.
11. Linde k, Willich SN (2003) How objective are systematic reviews? Differences between reviews on complementary medicine. *J R Soc Med* 96: 17-22.
12. Akimoto-Gunther L, Hubler M, Santos M, Carolino I, Sonoo N, et al. (2002) Effects of re-education in eating habits and physical activity on the lipid profile of obese teenagers. *Clin Chem Lab Med* 40: 460-2.
13. Guedes DP (2006) Anthropometric resources for body composition analysis. *Braz J Phy Edn Spo* 20: 115-9.
14. Yamashita AS, Lira FS, Lima WP, Carnevali LC, Gonçalves DC, et al. (2008) Influence of aerobic physical training on mitochondrial transport of long chain fatty acids in skeletal muscle: role of the carnitine palmitoyl transferase complex. *Brz J Sprts Medicine* 14: 150-4.
15. Donnelly J, Greene J, Gibson C, Smith B, Washburn R, et al. (2009) Physical Activity Across the Curriculum (PAAC): a randomized controlled trial to promote physical activity and diminish overweight and obesity in elementary school children. *Prev Med* 49: 336-41
16. Aguilar F, Martínez VV, Sánchez LM, Solera MM, Franquelo GR, et al. (2010) Impact of an After-School Physical Activity Program on Obesity in Children. *J Pediatr* 157: 36-42.
17. World Health Organization (2010) Global recommendations on physical activity for health.
18. Bernsten S, Mowinckel P, Carlsen K, Carlsen K, Kolsgaard M, et al. (2010) Obese children playing towards an active lifestyle. *Int J Pediatr Obes* 5: 64-71.

19. Lofrano-Prado MC, Antunes HK, do Prado WL, de Piano A, Caranti DA, et al. (2009) Quality of life in Brazilian obese adolescents: effects of a longterm multi-disciplinary lifestyle therapy. *Health Qual Life Outcomes* 3: 7-61.
20. Delgado-Noguera M, Tort S, Bonfill X, Gich I, Alonso-Coello P (2008) Quality assessment of clinical practice guidelines for the prevention and treatment of childhood overweight and obesity. *Eur J Pediatr* 168: 789-99.
21. Abreu CN (2003) Cognitive and Constructivist Psychotherapies, new frontiers of clinical practice. *Artmed Porto Alegre*.
22. Gustafson SL, Rhodes RE (2006) Parental correlates of physical activity in children and early adolescents. *Sports Med* 36: 79-97.
23. Malina R, Bouchard C (2002) *Physical activity of the young athlete: from growth to maturation* (1st Edn).
24. American Dietetic Association. (2006) Position of the American Dietetic Association: individual-, family-, school-, and community-based interventions for pediatric overweight. *J Am Diet Assoc* 106: 925-45.
25. David CWL, James DD, Katherine MM, Irene MH, Arya MS, et al. (2007) Canadian clinical practice guidelines on the management and prevention of obesity in adults and children. *CMAJ* 176: 1-117.
26. Kirk S, Scott BJ, Daniels SR (2005) Pediatric obesity epidemic: treatment options. *J Am Diet Assoc* 105: 44-51.
27. Gowan MW, Artiss JD, Strandbergh DR, Zak B (1983) A peroxidase coupled method for the colorimetric determination of serum triglycerides. *Clin Chem* 29: 538-42.
28. Robinson JC, Leon AS (1994) The prevention of cardiovascular disease. Emphasis on secondary prevention. *Med Clin North Am* 78: 69-99.
29. Romaldini CC, Issler H, Cardoso AL, Diamen J, et al. (2004) Risk factors for atherosclerosis in children and adolescents with family history of premature coronary artery disease. *J Pediatr* 80: 2.
30. Ministry of Health (2014) Surveillance of Risk Factors and Protection for Chronic Diseases by Telephone Inquiry.