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Measure: Multiprofessional Intervention in Overweight and Obesity of Users Assisted in the Primary Health Care

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Abstract

Obesity is a contemporary phenomenon that consumes an enormous and substantial public expense regarding health for needy countries. The amount spent only for the cost with the treatment of obesity for the SUS (The Unified Health System) was estimated around half a billion of reais in 2011 (Oliveira, 2013) [1]. In this scenery, the purpose towards prevention and control initiatives concerning these outlines must really become fundamental. This study has aimed to analyze the efficacy developed by a multidisciplinary team during a period of 12 months (from 2016 to 2017). The intervention has consisted in a number of periodic consultations supervised by this special team within food directions and physical training. All the data were synthesized and analyzed statistically through the Mcneunann Test, regarding the significance degree of $p< 0.05$. It has been observed in such results that most of the participants belong to feminine sex having from 45 to 81 years of age, a low schooling and a short monthly income. For the present, what must be said is that the intervention was wholly effective providing reduction of corporal measures, improvement in the quality of the diet consumed, besides a strengthening in the social network, empowering for the participants, further the expansion of knowledge about topics relative to food and nutrition. So, it can finally be suggested that initiatives towards obesity control are indeed effective and important and must be promoted everywhere.

Keywords: Obesity; Overweight; Prevention and Control; Primary Health Care; Health Promotion

Introduction

In Brazil the growth of obesity on average along all the territories and groups sets that problem at the heart of public agenda. Regarding percentage terms, it is easily verified that the prevalence concerned to obesity has doubled amongst school-age children and adolescents. The frequency has been placed around the rate pf 20%. Concerning the adults, by turns, there was a raise about overweight and obesity in all wages brackets. Obesity has particularly increased on average from 2.8% for men and 7.8% for women to 12.5% amongst men and 16.9% amongst women during the period from 1974 to 2009. The overweight has reached 50.1% for men and 48.0% for women (BRAZIL/VIGITEL, 2016) [2]. Social and economic differences have been observed. Obesity among women has been more frequent in the ones inserted in the intermediary income levels within 1 to 5 minimum wages. Among women with a lower educational level (less than 8 years of schooling. Among men, obesity grows proportionally according to the different social strata (BRAZIL/ VIGITEL, 2016) [2]. This profile reflects the deep and persisting inequalities of the present time in Brazil what represent important determinants concerning to overweight of the country. Particularly, this theme of social

determinants about health is present in several international documents such as report of the National Commission of Social determinants of Health (CSDH, 2010) [3] and more recently in agenda 2030 proposed by the United Nations (UN, 2015). The mentioned documents point out not only for the necessity of formulation, but also for the implementation of strategies to face the overweight and chronic diseases to reduce morbidly and mortality of the population in the world. These initiatives must be integrated into public policies and program in order to guarantee quality of life, health and welfare (Brazil/PNAN, 2010) [4]. In fact the literature has in evidenced the necessity, to expand public actions and intervention in those initiatives about overweight and obesity in Brazil. In this direction studies have shown interventions of that kind which have been carried out in different age levels with positive repercussions of the anthropometric indicators in physical fitness biochemical and nutritional parameters, psychological changes, as well as in the reduction of associated co-morbidities (MENDES *et al*., 2016) [5].

This study has aimed to analyze the effect of a multiprofessional intervention towards overweight for users of a Family Health Strategy located in the southeast region of Brazil in the inland of the State of Minas Gerais. The "Right Measure" program: in Brazil the integral care of the individuals and families supported by the (SUS) is based on a Health Care Network (RAS) with the Primary Health Care (PHC) as the care coordinator. The APS, for its own capillarity, contributes in order the care starts especially from the user's demands. Such demands are, in many circumstances, in local level, taking into account the peculiarities and specifiers of the problems in territory (MENDES, 2011) [6]. In this perspective, the "Right Measure" program was created in 2014 to be based on the needs of the population registered in the Health Strategy of the Family (ESF).

In the state of Minas Gerais, southeastern region of Brazil. Thus having being coordinated proposed an interpectoral program to contain the excess of chronic diseases at the local level. The program having being coordinated by different specialists, included health agent, nurse and unit physician. Beyond professional and undergraduate students of Physiotherapy and Nutrition Courses previously established in the health unit with interinstitutional partnerships between the municipal administration and local federal university. That program was maintained by integrated actions consisting of about 80 users, all of over 18 years of age and of both sexes. All the participants presented also a diagnosis of overweight and many of them were afflicted by chronic incommunicable diseases besides hypertension, diabetes mellitus (DM) cardiovascular, osteoporosis and other illnesses. The program which operates in a continuous current throughout the years includes: a) regular consultations with the doctor, nurse and nutritionist b) competent biochemical test and c) physical training lasting 60 minutes each one and being performed three days a week in the physical space of the health unit. It is worthwhile to mention that the "Medida Certa Programa" (The Right Measure Program) intends to implement the precept and standard of the Unified Health System (SUS) such as: universality, equity, completeness, decentralization, solvency, welcoming popular acceptance and community participation (BRAZIL/ SUS, 2000). And from the standard Brazil/ National Health Program (PNPS), to promote the local social network, the establishment of partnerships, a community with quality of life and well-bling of individuals (BRAZIL/PNAN, 2010) [4].

Methodology

The intervention lasted 12 months and it was carried out between October 2016 to 2017. The researchers' team referring to the partners of the University was put in charge to formulate the research, to collect data and to monetarize the execution of all stages of such research it was an intervention with a sample with individual of both sexes, over 18 years that had been previously diagnosed with overweight and or obesity, though the body mass index (BMI) parameters proposed by the World Health Organization (WHO, 1997) [7]. The inclusion criteria to take part in that research wearies to be registered in the ESF *** excerpt taken from blind review ***, 2) to have BMI, above 25 kg/m2 and/or 3) to participate in all stages of the multiprofessional intervention. The exclusion criteria, in turn, were: 1) to present health problems that limited or even intervention; 2) to have a heart rate lower than 65% in physical training sessions and / or 3) to miss any of the stages of the intervention multi-professional training with a minimum frequency of 85% including consultations, exams and physical training. From the 80 participants in the Right Measure program, only sixteen (16) could meet the inclusion criteria. For those ones, the objectives of the intervention, the Terms of Free and 36 Informed Consent (TCLE). And they lent themselves further clarification on the research steps. In addition, the received multiprofessional follow-up in Primary Health Care (APS) - ESF *** excerpt wearing light clothing. The height was obtained by means of a stadiometer with a precision of 0.1 cm of the mark Exact Height ©. Circular measurements were obtained by means of a anthropometric chart. All procedures followed the measurement protocols proposed by the Ministry of Health in Brazil (BRASIL / SISVAN, 2011) [8]. c) Physical Evaluation and Heart Rate: Frequency Journal of Obesity and Overweight 4 Manuscript Status: Under Review Processing ID: J taken for blind review ***, getting benefits for your health in a comprehensive way. The research was approved by the Ethics Committee in Research *** excerpt taken for blind review ***. The intervention included: physical, clinical, anthropometric and food assessments before and after the intervention program, as described below: a) Physical and Clinical Assessment: It was performed by the doctor and / or unit for the detection of any cardiovascular or other in order to make it impossible for individuals to participate in research; b) Anthropometric evaluation: It was performed by a team composed by nutritionist and academic of the Nutrition Course of a federal teaching institution of a top location. Data were obtained of weight (kg), height (m), circumferences of waist (CC) and hip (CQ). For these procedures a balance was of used Tanita © brand, with a maximum load of 150 kg and an accuracy of 100 g. THE balance was measured before each measurement and the volunteers were weighed standing, barefoot and wearing light clothing. The height was obtained by means of a stadiometer with a precision of 0.1 cm of the mark Exact Height ©. Circular measurements were obtained by means of an anthropometric chart.

All procedures followed the measurement protocols proposed by the Ministry of Health in Brazil (BRASIL / SISVAN, 2011) [8]. c) Physical Evaluation and Heart Rate: frequency application of a questionnaire (Annex II) validated in the pre and post-1 test stage containing information: socioeconomic and demographic (age, color / race, schooling, profession and family income); anthropometric variables (weight, height, CC, CQ, PA, glucose, cholesterol and triglyceride). And, also a Food Consumption Frequency Questionnaire (FFQ) contains ten following food groups: G1 (vegetables and veggies); G2 (meats and eggs); G3 (milk andderivatives); G4 (pasta and tubers); G5 (desserts and treats); G6 (fruits); G7 (industrialized); G8 (oils and fats); G9 (beverages); G10 (cereals and grains). And five consumption frequency scales (rarely, <1 x week, daily, 1 to 4 x week, 4 to 6 times per week). Finally, data were obtained on the general knowledge about food and nutrition of the group. The questionnaires were applied by a team trained in its own room provided by the Unit. The training was consisted of three consecutive steps: 1) stretching (15 minutes); 2) aerobic physical exercises (35 minutes) and 3) relaxation (10 minutes) with an average frequency of three times a week and duration of 60 minutes / each. All sessions were conducted and accompanied by physiotherapy academics and the ESF health agent. At those times, blood pressure and blood pressure were heart rate. Subsequently the data were tabulated by the team with the support of the software SPSS - Statistical Package for the Social Sciences for Windows version 15.0. Was used the McNeumann test to verify possible changes in measurements corporal and food consumption of participants before and after the intervention, considering a value of $p < 0.05$.

Results and Discussion

Sixteen (16) users of both sexes were evaluated, being 87.5% women (n=14) and 12.5 % men (n=02) from 45 to 81 years old. And it was therefore observed a predominance of women in that program. The raise of woman in the participations of Programs and actions of the primary Health Care (PHC) in Brazil has been a tendency. The study by Paula *et al.* (2013) [9] in this same municipality carried out finding very similar results. Thus the percentage of female users was (70.7%) in comparison with the one made was (29.3%). The study of a greater scope carried out by Mendonça and Lopes (2012) [10], has verified a participation of woman about 92,8% and (7,2%) for men's in the intervention program called "City Gym" implemented in the city of Belo Horizonte, Minas Gerais with the participation of 195 individuals. The National Health Survey (PNS) carried out by the Ministry of Health in partnership with the Brazilian Institute of Geography and Statistics (Brazil/PNS, 2015). Between the periods of 2013-2014, has revealed that 71.1% of the population of the whole country was studied during that period. And from this total, 47.0% of all the Health Units (BHU) as its main entry point for Care of the SUS. The data have also showed that the SUS has attended

Variables	n	%
Age		
Adults	05	31,25
Older	11	68,75
Sex		
Male	02	12,5
Female	14	87,5
Profession		
Pensioner	08	50,0
Industry services	07	43,75
Home	01	6,25
Color/race		
Black	07	43,75
Brown	08	50,0
Yellow	01	6,25
Education		
Elementary education	10	62,5
Full elementary education	02	12,5
Full time	02	12,5
Incomplete secondary education	01	6,25
Post graduation course	01	
Family income		
Between 1 to 2 minimum salary	15	93,75
From 3 to 4 minimum salary	01	6,25

Source: research data (2017)

Table 1: Socioeconomic and demographic variables of the participants of the Measure Right Program. Diamantina-MG, Brazil, 2016-2017

persons of lower mainly (with less than 8 years of scholarship). According yet to that research, the proportions of people that have consulted with the physicians of the SUS were higher than the national average: (78.0% for women in the group aged from 40 to 59 years old (83.5%). Those results corroborate with the population that has relation to our study where there was a predominance of the women and the elderly which was also prevalent in our study. Participants aged 60 years and older have corresponded to 68.7% (n=11) of the sample. The other ones being classified as adults 31.25% (n=05). This profile approaches also at the data obtained in the National Health Survey (BRAZIL/PNS, 2015) and reflects the crescent participation of the elderly in the SUS health services, as a consequence of the demographic transition process observed in the country (VASCONCELOS and GOMES 2012) [11]. With reference to the socioeconomic data, it is noticed that the majority of the participants was black and brow persons (93.75%), they have presented a low schooling (in completed basic fundamental course and proved to earn then nearly 1 or 2 minimum monthly family wages. As regards the subject mentioned, the study by Porto, Ungá and Moreira (2011), it has analyzed the use of the SUS health Services and yet has revealed that 88% of the visits were done by the poorest layer of the Brazilian population and that has corroborated with the data found in the study about the occupational activities. Finally, what it can be concluded is that 50% (n=08) of the users were pensioners; only one (n=01) was a housewife and the remaining worked on the sector of civil service (n=07). The socioeconomic and demographic outlines are describes at the Table 1 below:

In reference to the anthropometric indicators, what can be verified that the averages before the intervention for the Body Index (BMI), was 27,43 kg/m^2 and for the body weight 67,37 kg. In this regard, it is opportune to emphasize that the elderly group has its nourishing status sometimes contradictory according to physiological changes of such's stature due to compression of vertebrae and flattening of the invertebrates and loss of muscle tone, occasioning muscle atrophy and other changes. The study by Pereira *et al.* (2016) [12] that used the data from the Budget Survey (POF 2008/2009) with more than 20 thousand elderly people in Brazil revealed that nutrition had an impact on the status of the group. Thus the highest prevalence was found with elderly people living in the rural layer (26,3%) and in the regions (23,7%) and Central west (20.9%) for obesity in elderly people that live in the South (45.1%) and Southeast (35.3%) and in the rural stratum (39%). Thus, it is suggested to deepen the study of the characteristics of the nutrition status of the elderly to use contextual variables in the municipality, data from the research of the Ministry of Health-VIGITEL (Brazil, 2016) [1] conducted in the Brazilian Capitals have shown similar behavior to that one found this present study. In general, the prevalence of overweight has been lighter in the age group between 45 and 64 years old (62.4%) reducing the age range of the elderly (57.7%). It is also noted that the lower schooling, the greater is the occurrence of overweight 1 in those older than 18 years. Thus, 59.2% of individuals with up to 8 years of schooling had of weight. In subjects with education of 9-11 years of age, the prevalence was 53.3% and with more than 12 years of education 48.8%. In fact, the most socially vulnerable segments of the country, in o the words the poor and less educated individuals they have become a "fragile segment" or aim of the great corporations, victims as they are originating from marketing of unhealthy products by transnational processed and ultraprossed (KICKBUSCH, 2015) [13]. This is a matter that requires extensive public actions of great reach. In this direction prevention actions and health promotion have been encouraged by the Ministry of health in Brazil in order to Control the overweight and the reduction of mortality due to chronic non-communicable diseases which are responsible for about 80% of deaths in Brazil. The Brazilian government has also stipulated to put an end to the growth of that illness in the Country. So prevalence of obesity about 17.9% for the year of 2019, throughout health policies with food and nutritional security, in addition, according to level of the federal government placed about this subject was set at 12.5% for the consumption of sugary drinks. The to reduce by less than 30% the consumption of soft drinks and artificial juices amongst adults in 2019 in view of the positive relationship about the raise of the obesity (WHO, 2015) [14]. Finally, it is intended to increase more and more above 17% the consumption of fruit amongst all the population of adults in the same period in order they can recognize that Healthy diets based on "fresh foods" are strongly recommended for their health and important to control the problem of overweight (KATZ and MELLER, 2014) [15].

The research contributes to this the debate by highlighting the positive effects pf a multiprofessional intervention about overweight of ESF users *** excerpt taken for blind review ***. In this way, what can be verified is that the action has shown indeed extremely favorable for the reduction of corporal measures improvement of the physical conditioning, food consumption some knowledge about food and nourishment besides to strengthen social ties for the local level. In this regard (Table 2,3 and 4) try to do evidence concerning that positive effects of the intervention by promoting health and wellbeing for the participants.

Parameters	Pre-intervention		Pos-intervention		p-value
	n	mean	n	mean	
Weight (kg)	16	67,37	16	63,56	0,0015
BMI (kg/m^2)	16	27,43	16	27,98	0,0043
CC (cm)	16	89,12	16	85,72	0,0026
CQ (cm)	16	0,87	16	0,81	0,0018
RWH (cm)	16	0,76	16	0,73	0,0035

Source: research data (2017). Legend: BMI: Body Mass Index, CC: circumference of waist, CQ: circumference of hip and RWH: relation waist/hip

Table 2: Effect anthropometric parameters of the Measure Right program Diamantina/ MG, Brazil, 2016-2017

Table 2 shows the reduction of most of the body measurements with a scarce raise from 27.43 kg/m^2 to 27,98 kg/m^2 which seems to indicate a raise among the participants of lean mass and that this question deserves a better evaluation in Table 3 which reveals the data of habitual consumption of the group coming from the Questionnaire of Food Frequency (FFA). There is a raise in the habitual intake of fruits, vegetables and veggies. Beneficial evidence given with the consumption of those foods has been low by the Brazilian population. About this respect the VIGITEL research (BRAZIL, 2016) [1] revealed that only one amongst three individuals of that age group consumes regularly fruits and vegetables (five days a week). In this sense, these results prove to be very favorable in having in view. The fact that diets based about "*in natura*" foods are essential for the promotion of health and control of the overweight the body (BRASIL, 2014) [16]. At the same time, a reduction in the consumption of oils and fats as well as desserts and delicacies. Such changes in the consumption profile is important because both, oil and sugar, are nutrients that the greater occurrence of chronic diseases such as: cardiovascular disease and *diabetes mellitus* besides their contribution to weight gain. The VIGITEL (BRAZIL, 2016) [1] revealed that the number of people diagnosed with diabetes has increased about 61.8% in the last ten years in Brazil and that women belong to the most vulnerable group to this (9.9%) when compared with the group of men (7.8%). In this way, the reduction of foods and preparations of the group of sugars becomes very essential for the prevention of *diabetes*. Ambivalences and contradictions were also observed in food consumption in the group revealing the complexity that surrounds the choices and behavior of the individuals in their spaces of social interaction. Thus, a raise in the consumption of items such as pasta and tubers in industrialized countries after the intervention period. Admittedly, processed and ultra-processed foods have a direct impact on the prevalence of obesity and, therefore are restricted of the daily diet of the group, as recommended by the "Food Guide of the Brazilian Population" (BRAZIL, 2014) [16]. In this respect, information and dissemination of the recommendations contained in the Food Guide are fundamental in these segments to control overweight.

Food Groups	Pre intervention	post intervention	p-value
Food and beverage	45,2	62,7	0,002
Meat and eggs	66,5	65,8	0,0056
Milk and milk products	52,8	47,3	0,0647
Pasta and tubers	78,2	82,7	0,0752
Desserts	23,9	15,9	0,0880
Fruit	58,2	72,1	0,001
Industrialized	63,7	75,2	0,0752
Oils and fats	25,1	20,9	0,001
Beverages	33,1	31,8	0,0528
Cereals and grains	69,5	72,9	0,0679

Source: research data (2017).

Table 3: Frequency of daily consumption of food groups, adults and the elderly. Diamantina/MG, 2016-17

Questions	Before (%)	After (%)
What is healthy eating for you? Answer: natural, rich in FVG	77,7	100
Do you think your food is healthy?	Yes: 55 No 44	Yes: 77,7 No: 22,2
Name 2 healthy food eat every day	Rice and beans: 38,8 Meat and FLG: 27,7	Rice and beans: 33,3 Meat and FLG: 66,6
What is unhealthy eating for you?	Excessive mass: 33,3 Fat, salt, sugar and industrialized: 66,6 overeating: 11,1	Fat, salt, sugar and industrialized: 66,6
Name 2 unhealthy foods that you eat every day?	Carbohydrates: 11 Sausages: 16.6 Salt, sugar and fat: 28	Not as: 38.8% Industrialized: 11.1 Salt, sugar and fats: 50
What is excess weight for you?	Weight above normal: 39 Do not diet and AF: 16.6 Harmful to health: 16.6	Weight above normal: 55.5 Harmful to health: 44.4
What causes you to be overweight?	Do not diet and AF: 77.7 Anxiety: 5.55	Do not diet and AF: 77.7 Anxiety: 5.55
What could be done to lose weight?	Diet and FT: 94.4	Diet and FT: 94.4
What is harder for you in order to lose weight?	Do not do FT and Diet: 72.2	Do not do FT and Diet: 72.2

Source: research data (2017). Legend: FLG: fruits, vegetables and greens, FT: physical training

Table 4: Knowledge about diet and nutrition of the participants of the Measure Right program (n = 16), Diamantina / MG, Brazil, 2016-2017

The present information are about food and nutrition knowledge and were they can be obtained through ten direct and objective questions inquired by the team by an individualized way with two moments: before and after the intervention period. They have been analyzed in a descriptive and analytical way. Thus, by incorporating more knowledge about healthy and eating habits. And also a greater perception about overweight and its determinants. This self-reflection imposed at the time of the interviews had meant that they could recognize the kind of the problem and for their coping. Fundamentally this process of reflexivity has been important for self-care and empowerment of the group. It should be noticed that Measure has seemed to show and provide the group with a sense of well-being, quality of life and acceptance as strength an essential element for the promotion of health.

The study by Silva and Baratto (2015) [17] with 20 elderly people of both sexes, enrolled in the extension project - Open University for the Third Age UNATI in the metropolitan area of the city of Rio de Janeiro evaluated the knowledge before and after an educational intervention to identify the level of nutrition information. The authors in the pre-test period of elderly had a score of 7.9%. In the post-test, the mean score was 8.85%. Therefore, they concluded that educational intervention what can contribute to decision making and choices of the group, what leads us to presume that nutritional counseling and establishment of a multidisciplinary service with a space for dialogue and negotiation of the Right Measure Program allow several topics related to health, such as self-care body, well-being, problematized. Such a strategy should be encouraged to control overweight and obesity in the group [18-20].

Finally, this present research has allowed us to corroborate with several studies of multiprofessional intervention to cope with the overweight in the country because the evidence of the effectiveness of the actions in the fight against obesity and chronic no communicable diseases (MENDES *et al.,* 2016) [5].However, many of the initiatives are being carried out with child and youth group, and in this way, it is what must be invested in actions with those age group, especially in Attention Primary Health Care at the local level [21-23].

Final Considerations

The research tries to show and also elucidate why the multiprofessional intervention was effective to control the overweight. The verified benefits have showed that there was a positive impact about the following parameters' reduction of body measurements, strengthening of the social network and improvement of the food and nutrition knowledge. Thus, the evidence presented in this present study gets in touch with the success of multiprofessional interventions in the municipality, especially in Primary Health Care.

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