# Treatment of food addiction: preliminary results

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## Dear Editor,

There has been an increase in the number of publications using the term *food addiction* (FA), with many animal and humans neuroimaging studies demonstrating similarities between food and drugs of abuse[1,2]. FA is most often assessed with the Yale Food Addiction Scale (YFAS), a questionnaire which directly applies DSM-IV-TR substance dependence criteria to food and eating[2]. Although FA is not an official diagnosis, YFAS scores are associated with eating disorders, depression, emotion dysregulation and lower self-esteem[3], suggesting a need to target these symptoms in treatment.

There is a scarcity of research investigating treatments designed specifically for FA. Schema therapy (ST) is an approach which emphasizes the therapeutic relationship, the emotional and life experiences. Group ST treatments have demonstrated efficacy in treating both eating disorders and substance abuse[3].

The aim of the present pilot study was to examine the feasability and efficacy of a group treatment program for FA which included components of nutritional orientation, motivational interviewing (MI) and ST. Participants were referred, in 2016, through the outpatient impulse control disorders unit at the Institute of Psychiatry of the University of São Paulo. The program comprised 21 weekly sessions divided into two phases, presented in Table 1. Patients completed self-report questionnaires pre- and post-treatment to assess eating behaviour, maladaptive schemas, depression and anxiety symptoms. Weight and height were measured to assess BMI. We administered the portuguese versions of the YFAS[2], Bulimic Investigatory Test of Edinburgh (BITE), Beck Depression Inventory (BDI), Beck Anxiety Inventory (BAI), and the Young Schemas Questionnaire (YSQ-S3[5]), a measure of early maladaptive schemas (EMS).

**Table 1.** Description of Food Addiction Group Treatment Program

| SESSION | THEME | OBJECTIVES |
|---|---|---|
| Motivational Interviewing Phase | | |
| 1 | Orientation, motivation levels, and stages of change | Group integration; psychoeducation on food addiction; participants identify their motivation levels and stages of change; baseline assessment. |
| 2 | Stages of change, cognitive distortions, and ambivalence | Explore cognitive distortions about behaviour change; increase motivation and resolve ambivalence surrounding change. |
| 3 | Discrepancies and obstacles to behaviour change | Investigate psychosocial obstacles and facilitate problem solving. |
| Behavioural Nutrition Phase | | |
| 1 | Presentation, Food Pyramid, Food Diary (FD) | Describe the food pyramid; introduce FD. |
| 2 | Food groups | Explain the food groups and the importance of nutritional awareness. |
| 3 | Behavioural nutrition | Review the FD; investigate dysfunctional eating behaviour and identify alternative behaviours. Education surrounding the physiology of nutrition and its consequences on behaviour. |
| 4 | Nutrition, *diet* and *low-cal* food products, and fad diets. Saciating foods. | Information about diet, low-cal food products, fad diets, and saciating foods. |

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| SESSION | THEME | OBJECTIVES |
|---|---|---|
| 5 | Nutrition planning | Discuss the importance of organization and nutritional planning and how to put it into practice. |
| 6 | Concluding session | Review. Discuss how to set achievable goals. Termination. |
| Schema Therapy (ST) Phase | | |
| 1 | Psychoeducation about ST 1 and questionnaire results | Discuss ST and the results of Young's questionnaires. |
| 2 | Psychoeducation about ST 2 and Thought Diary (TD) | Reading about schemas and completing TD. |
| 3 | Revision and schema diary | Revise schemas and complete schema diary. |
| 4 | Role of schemas and principal modes | Understand the relationship between schemas and modes. Work with images. |
| 5 | Images and the origin of schemas. | Understand the relationships among schemas, modes, and attachment bonds. |
| 6 | Avoidant Protector mode | Avoidant Protector mode: empathic confrontation. |
| 7 | Demanding/punitive Parent mode | Demanding/punitive Parent mode: limited reparenting. |
| 8 | Impulsive and vulnerable child mode | Impulsive and vulnerable child mode: empty chair technique. |
| 9 | Healthy Adult | Strengthening the healthy adult through mental imagery and coping cards. |
| 10 | Social Skills I | Breaking behavioural patterns. |
| 11 | Social Skills II | Assertiveness training; dialogue between dysfunctional and healthy side. |
| 12 | Letter to the Healthy Adult and Conclusion | Revise the letter to the healthy adult, termination, and final evaluation. |

One male and eight females with FA participated, and seven participants completed treatment. The mean age was 39.7 (SD = 5.4) years, 44.4% were married, 77.8% white, and 66.6% had completed college. The sample had an epidemiological profile similar to previous studies[6].

Paired samples t-tests compared questionnaire scores before and after treatment. The most prevalent EMS was "insufficient self-control/self-discipline" (57,1%). From pre- to post-treatment, there was a significant reduction in the number of FA symptoms (from 6,14 to 2,4), t(6) = 3.79, $p = .009$. There was no significant decrease in BITE severity (from 4,83 to 5,67) or symptom count (from 17,67 to 17,83), depressive symptoms (BDI) (from 20 to 17,17), anxiety symptoms (BAI) (from 15,14 to 14,42), EMS (from 3,71 to 0,29) or BMI (from 40,22 to 38,65). At post-treatment, six of seven patients (85.71%) no longer met YFAS diagnostic criteria for FA.

Our reductions in symptom count and proportion meeting FA criteria exceed those found by Hilker *et al.*[8]. Taken together, our findings suggest that the proposed model of ST, accompanied by behavioural nutrition and MI, may represent a promising avenue for the treatment of FA. Additional research is needed to investigate the efficacy of this treatment in larger samples, employing control groups and randomization. Furthermore, continued investigation of the validity of the FA construct is needed.

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