Articles

Psychological intervention programs for children with overweight and obesity: Systematic review

Programas de intervención psicológica para niños y niñas con sobrepeso y obesidad: Revisión sistemática

Straffon-Olivares, Diana K.; Bautista-Díaz, María-Leticia

Diana K. Straffon-Olivares
karinastraffon94@gmail.com
Private Practice, México

María-Leticia Bautista-Díaz
psile_7@yahoo.com.mx
Universidad Autónoma Nacional de México, México

Mexican Journal of Medical Research ICSA
Universidad Autónoma del Estado de Hidalgo, México
ISSN-e: 2007-5235
Periodicity: Semestral
vol. 9, no. 17, 41-46, 2021
sitioweb@uaeh.edu.mx

Received: 19 March 2020
Accepted: 27 April 2020
Published: 05 January 2021

URL: http://portal.amelica.org/ameli/journal/587/5872977010/

Corresponding author: karinastraffon94@gmail.com

Abstract: Currently obesity is a public health problem that is characterized by being a chronic disease, caused by various factors ranging from genetic, metabolic or sociocultural problems.
Objective: To analyze psychological interventions for overweight and obesity, in children, with favorable results in the participants.
Method: A systematic review was carried out on the internet based on articles published in Crossref and PubMed by using keywords such as "interventions for overweight children", "Children obesity interventions", "psychological interventions in children".
Results: In a first revision, 79 psychological programs applied in children were found, when reviewing the programs, it was found that only 19 had favourable results in the participants.
Conclusion: The interventions had positive results; however, it will be necessary to design more adequate interventionsfor obese and overweight people, and contribute more to the solution of these public health problems.

Keywords: Obesity, overweight, well-being, interventions, children.

Resumen: Actualmente la obesidad es un problema de salud pública que se caracteriza por ser una enfermedad crónica, causada por diversos factores que van desde problemas genéticos, metabólicos y/o socioculturales.
Objetivo: Analizar las intervenciones psicológicas para sobrepeso y obesidad, en niños, con resultados favorables en los participantes.
Método: Se realizó una revisión sistemática en la red con base a artículos publicados en Crossref y PubMed mediante el empleo de palabras claves como "intervenciones para sobrepeso niños", "intervenciones obesidad niños", "intervenciones psicológicas en niños".
Resultados: Se encontraron en un inicio 79 programas psicológicos aplicados en población infantil, al revisar los programas se encontró que solo 19 tenían resultados favorables en los participantes.
Conclusión: Las intervenciones tuvieron resultados positivos, sin embargo, es necesario diseñar intervenciones más adecuadas para personas con obesidad y sobrepeso y contribuir más a la importancia que tienen como problemas de salud pública.

Palabras clave: Obesidad, sobrepeso, bienestar, intervenciones, niños.

INTRODUCTION

There are several indicators to determine the condition of being overweight, these may be the measurement of skin fold, elbow and neck width, waist circumference, waist-hip ratio, fat percentage, among others.[1] Specifically, people with fat percentages between 12 and 20% in men and 20 in women and 30% are considered obese; a simple and inexpensive indicator to determine the categories of body weight is the body mass index (BMI), this is a ratio of weight and height to the square. However, it is important to considerer that for children, it must be taken into account the age (in years and months) and the gender .[2]

The problem of excess weight (overweight or obesity) is of such magnitude that the World Health Organization (WHO) uses the term *globesity* to express this is as an epidemic issue.[1]

In 2014, WHO documented an estimate of 1.900 million people over 18 years old and 41 million children under 5 years old worldwide in conditions of overweight or obesity.[3]

On the other hand, regarding long-term consequences of an overweight condition and obesity, it can be observed the metabolic type such as risk of hypertension, hypoventilation syndrome, sleep apnoea, liver disease fatty infiltration of the liver or type 2 diabetes mellitus, and other diseases or the psychosocial ones like discrimination or psychological such as anxiety, depression, low self-esteem, among others.[4,5]

What is relevant is that comorbidity, especially obesity threatens physical and mental health of the person who suffers from it, as it decreases the quality of life and expectancy, for example, it has been estimated that for every extra 15 physical kilos, the risk of early death increases by 30% .[6]

Talking about some causes of obesity, inadequate habits of children play an important role since obesity has increased since the eighties due to the food provided at home was mixed or replaced by dense foods also called fast food such as burgers, pizzas, hot dogs, fried chicken, potatoes, etc ., and there has been also a decrease in the outdoor activities ,therefore, increasing sedentary life, thus lower energy expenditure and higher caloric intake can develop or maintain the condition of obesity.[7]

Under this reasoning, the condition of obesity can be permeated by various aspects mentioned above, such as physical discomfort, anxiety, sadness, guilt, frustration, self-blameand its surroundings. About this, one possible explanation would be the ideal of beauty, thinness that prevails today, thus, to the people with obesity compared with this ideal can lead them act against their health (physical, psychological or social).[3,8]

Childhood obesity has consequences on psychological development and hence the child's social adaptation, overall, people (adults or children) who are obese are discriminated by society, which often affects the quality of life of girls and boys.. The continued development of these physical or psychological disorders can be reduced by implementing interventions that allow protective factors to be developed in its participants, which in turn reduce risk factors.[10]

In this way, it is important to know the interventions with positive results on the condition of overweight in children and to replicate or improve these interventions to address this national and global problematic.[6] Therefore, the objective of this study was to analyse psychological interventions for overweight and obesity in children with favourable results in the participants.

Author notes

karinastraffon94@gmail.com

METHOD

A systematic review was conducted on the internet based on articles published in CrossRef and PubMed by using keywords such as "interventions for overweight children", "children obesity interventions," "psychological interventions in children". Inclusion criteria were: original articles on interventions with children (<18 years) that the psychological program has an objective, detailed procedure, with specified duration and results, and finally, that the programs are applied face-to-face. While the exclusion ones were systematic reviews, that there are participants with comorbidities or diseases that promote obesity or being overweight, finally, that the programs were applied digitally or remotely.

RESULTS

When conducting an exhaustive review 79 items were found on interventions which 45 belonged to PubMed (1985-2019) and 34 belong to Crossref (2005-2018). In a first filter 49 items were discarded and 35 were kept (13 Crossref and 22 Pubmed) (Figure 1).

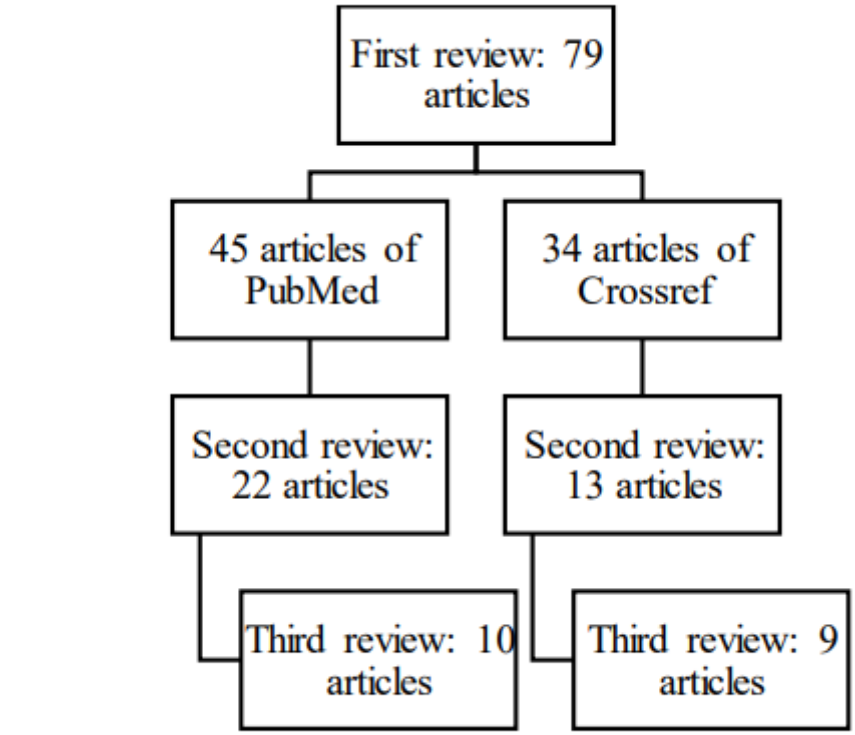

Figure 1. The systematic review process

FIGURE 1.
The systematic review process

Finally, the review that met all the criteria for inclusion only 19 psychological interventions aimed at obesity and overweight were found (Table 1).

TABLE 1
Comparison of psychological interventions for obesity and overweight

Authors and year	Samples	Duration of intervention	Description of intervention	Psychological aspects addressed	Results
Overholser and Beck (1985)11	16 patients (7-12 years old)	2 weeks	90-minute group sessions	Cognitive restructuring self-efficacy	Changes in eating style can be generated and maintained in the short term.
Warschburger, Fromme, Petermann, Wojtalla and Oepen (2001)12	197 patients (9-14 years old)	6 weeks	Pre-post evaluation weekly sessions	Eating habits Quality of life	The effectiveness of the combination of cognitive-behavioral treatment, diet and exercise was verified in overweight and obese children and adolescents.
Edwards, Nicholls, Croker, Van, Viner and Wardle (2006)13	33 patients (8-13 years old)	12 weeks	Pre-post evaluation for four consecutive groups	Cognitive restructuring	Children lost 8.4% of BMI during the treatment time, and this was maintained after a 3-month follow-up. Self-esteem and depression improved significantly.
Salas, Ghattas, Ceballos and Burrows (2010)14	152 patients (3-16 years old)	12 months	monthly group sessions Control group experimental group	Self-control emotional regulation	Patients who presented adherence to treatment and regularly attended the sessions presented positive changes in behaviours that manifest "deregulation" in the behavioural and emotional control mechanisms of the obese.
Pompa, Gonzalez and Torres (2010)15	20 patients (8-11 years old)	5 days 6 months follow-up	bi-weekly group sessions	Anxiety and depression	A decrease is observed in BMI, anxiety and depression.
Pomp and Montoya (2011)16	21 patients (8-11 years old)	6 months	Pre-post evaluation	Anxiety Depression	A decrease was observed in anxiety and depression at the beginning and at the end of the summer camp.
Panagiotopoulos, Ronsley, el-Dubayee, Brant, Kuzeljevic, Rurak, Cristall, Marks, Sneddon, Hinchliffe, Chanoine and Masse (2011)17	89 patients	10 weeks	Pre-post evaluation weekly sessions	Emotional problems Anxiety Depression	It is the first naturalistic treatment against obesity cohort program to be evaluated in Canada. It presented favorable results in terms of decreased BMI, anxiety and depression.
Murdoch, Payne, Samani-Radia, Rosen-Webb, Walker, Howe and Lewis (2011)18	17 patients (7-14 years old)	15 weeks	Pre-post evaluation weekly sessions	Eating Disorders Eating habits	Showed no change BMI of in participants but on some eating habits.
Martin and Robles (2012)19	7 patients	12 weeks	Pre-post evaluation	Self-efficacy	Significant weight loss.

Authors and year	Samples	Duration of intervention	Description of intervention	Psychological aspects addressed	Results
	(10-12 years old)		weekly 90-minute sessions	Adherence to treatment Eating habits	Children regulate the amount of food they eat, established meal times, increase physical activity and monitor the number of calories they consume.
Alves Fernandes, Lopera, Rui, Drieli and Nardo (2013)20	69 patients (10-18 years old)	16 weeks	Control group experimental group	Self-control Cognitive Restructuring Self-perception Social skills	Promotes the reduction of the prevalence of metabolic syndrome and dyslipidaemia in obese children and adolescents.
Vasquez Diaz, Lera, Meza Salas Rojas, Atalah and Burrows (2013)21	120 patients (8-13 years old)	3 months	Control group and experimental group	Adherence to treatment	There were significant differences between the two groups in the change in BMI, waist circumference, body fat, metabolic syndrome, abdominal obesity, hypertriglyceridemia and hyperglycaemia fasting.
Danielsen, Nordhus, Júlíusson, Mæhle and Pallesen (2013)22	49 patients (7-13 years old)	12 weeks	Pre-post evaluation Control group experimental group	Depression Anxiety Behaviour problems	There were favorable changes in BMI, depressive and anxious symptoms. Changes were maintained and increased in the follow-up months.
Guo, Zeng, Zhuang, Zheng and Chen (2015)23	41 patients (10.8 years old)	12 months	Pre-post evaluation Control group experimental group	Adherence to treatment Eating habits	They showed changes in BMI and eating habits.
Tárraga, Tárraga, Panisello, Rosich, Castell and Carbayo (2017)24	11 patients (6-12 years old)	11 weeks	Pre-post evaluation weekly 90-minute sessions	Adherence to treatment Anxiety	The program has a positive influence on children / as and their families, facilitating weight loss and changing eating habits and the emotional aspects that contribute to the development of obesity.
Eren, Akbayrak and Arslan (2017)25	86 patients (8-18 years old)	12 months	Control group experimental group	Self-concept Eating habits	Obesity reduced and children educated on healthy lifestyle behaviors.
Pompa, Castro and Hair (2018)26	65 patients (8-12 years old)	6 months year up follow-	Evaluation pre- post with two intervention groups and one control	Anxiety Depression	Children who received longer psychological follow-up achieved better weight reduction.
Eneritz, Herrero, El Rio, Ibarguren, Martinez, Arrate and Gravina (2017)27	25 patients (7-12 years old)	11 weeks 12 months follow-up	Pre-post evaluation weekly 90-minute sessions	Assertiveness Self esteem Emotions Adherence to treatment	There was a decrease in participants BMI and an increase in participants healthy lifestyles.
Williams, Bustamante, Waller and Davis (2019)28	175 patients	8 months	Pre-post evaluation Control group	Depression Expression of anger self-perception	Reduction of body fat and better physical shape, which shows a positive effect of training.

Authors and year	Samples	Duration of intervention	Description of intervention	Psychological aspects addressed	Results
	(8-11 years old)		Experimental group		
Tronieri, Wadden, and Leonard Berkowitz (2019)29	7 patients (12-17 years old)	16 weeks	Pre-post evaluation	Anger Depression body satisfaction	It was a highly acceptable treatment that improved BMI, cognitive restriction, hunger, and physical activity in adolescents with obesity.

DISCUSSION

The fact of receiving psychological help today is still a taboo and considering psychological programs in children is even less unthinkable for the population. Psychological disorders for children were accepted until the 1980s, so many of the programs in this population do not include psychological support.[12]

In this systematic review, in relation to the historical context, articles about programs or psychological interventions for children with overweight and obesity were found until 1985 by addressing the psychological aspect as a support and not a formal part of the intervention.[11]

A key point is that when carrying out literature reviews, various interventions focused on overweight and obesity were found, but these were addressed from the nutritional or physical point of view.[23] On the other hand, there is a great lack in interventions addressed from the psychological point of view for this problem since on several occasions it is left aside focusing only on the physical factor, which presents positive changes momentarily on the person, but by not having behavior as a target for change, these changes do not become permanent.[15,26,27]

The main problem observed when comparing programs is seeking to install changes in terms of exercise habits and eating plan, but focusing on what they are doing for the duration of the program without seeking to change habits, behaviours, emotions or contexts for which the participants are going through so that a good part of the achievements accomplished in this program are lost at the end as people fail to follow up what has been learned, this is something that is much debated in the selected interventions and therefore several were discarded.[23,24,27]

From this it was found that treatments with psychological support have greater adherence to treatment, on the other hand, some programs despite having psychological accompaniment, or the approach as such, make use of drugs so they are discarded and are no longer viable psychological programs for this review.[30]

But there remains a huge gap between designing psychological interventions for overweight and obesity and using psychological tools to accompany; in the systematic review only two interventions designed psychologically for overweight and obesity were found, the rest were psychological tools accompanying programs with nutritional or physical approach which presented favourable results, but not in the same way or quantity as the others [11,12,16,17]

All programs reviewed had positive results, but in the case of those who were designed from the psychological and no coaching approach had better results in the future and better adherence since it worked integrally eating habits along mental health of subjects generating a complete change in the context of the participants, promoting better adherence to healthy lifestyles.[21,23,24,28,29]

Something important to note is that obesity is not a cosmetic problem that is judged by the way in which a person looks but rather it is a health problem that can lead in extreme cases to death, so its prevention and treatment from early stages of life is imperative to do something about such as promoting food education, regular physical activity, psychological well-being and establishing a healthy lifestyle to improve the individuals' quality of life.[8]

When looking for solutions to public health problems of the magnitude of obesity and overweight (a problem in which Mexico is first place worldwide) one should not only seek to modify behaviours related to food but to seek mental health of the subjects to generate protective factors that can lessen the problem.[6]

CONCLUSION

There are few interventions found that had a psychological approach design to people having obesity and overweight despite their importance as public health problems. Generating psychological-based interventions on this type of problem becomes important given that giving people tools that allow them to have protective factors that they can use to mitigate the problem they are presenting could generate a decrease in the problem itself. It is important to have the conduct of the person as a central point, in addition to not only have a psychological aspect in the problem but also multidisciplinary, that is taking the physical and psychological aspects to lessen the severity of the problem.

CONFLICT OF INTERESTS

The authors declare that they have no conflict of interest.

REFERENCES

1. Kelishadi R, de Ferranti SD, Majdzadeh R, O'Dea JA, Gupta AK, AdeliK. Childhood obesity: today and tomorrow's health challenge. J. Obes. 2013; 2013:208392.
2. Gutiérrez-Cortez EA, Goicochea-Ríos ES, Linares-Reyes E. Definición de obesidad: más allá del índice de masa corporal. Rev. Med. Vallejiana. 2020;9(1):61-4.
3. Bellido D, Bellido V. Composición corporal en niños y adolescentes: en búsqueda de la técnica ideal. Nutr. Hosp. 2016;33(5):1013 -4.
4. Oyarce K, Valladares M, Elizondo-Vega R, Obregón AM. Conducta alimentaria en niños. Nutr. Hosp. 2016;33(6):1461–9.
5. Macías M AI, Gordillo S LG, Camacho R EJ. Hábitos alimentarios de niños en edad escolar y el papel de la educación para la salud. Rev. Chil. Nutr. 2012;39(3):40-3.
6. Dávila-Torres J, González-izquierdo JJ, Barrera -Cruz A. Panorama de la obesidad en México. Rev. Med. Inst. Mex. Seguro Soc. 2015;53(2):240- 9.
7. Pérez-Herrera A, Cruz-López M. Situación actual de la obesidad infantil en México. Nutr. Hosp. 2019;36(2):463-9.
8. Neves CM, Cipriani FM, Meireles JFF, Morgado FFDR, Ferreira MEC. Body image in childhood: an integrative literature review. Rev Paul Pediatr. 2017;35(3):331–9.
9. Martínez-Munguía C, Navarro-Contreras G. Factores psicológicos, sociales y culturales del sobrepeso y la obesidad infantil y juvenil en México. Rev. Med. Inst. Mex. Seguro Soc. 2014; 52(1):94 -101.
10. Sagar R, Gupta T. Psychological Aspects of Obesity in Children and Adolescents. Indian J. Pediatr. 2018;85(7):554 –9.
11. Overholser J, Beck S. Assessing generalization of treatment effects and self-efficacy in the modification of eating styles in obese children. Addict. Behav. 1985;10(2):145–52.

12. Warschburger P, Fromme C, Petermann F, Wojtalla N, Oepen J. Conceptualisation and evaluation of a cognitive-behavioural training programme for children and adolescents with obesity. Int. J. Obes. Relat. Metab. Disord. 2001;25 Suppl 1:S93–5.

13. Edwards C, Nicholls D, Croker H, Van Zyl S, Viner R, Wardle J. Family-based behavioural treatment of obesity: acceptability and effectiveness in the UK. Eur. J. Clin. Nutr. 2006;60(5):587–92.

14. Salas MI, Gattas V, Ceballos X, Burrows R. Tratamiento integral de la obesidad infantil: Efecto de una intervención psicológica. Rev. Med. Chile. 2010;138(10):1217-25.

15. Pompa EG, González MT, Torres F. Ansiedad y Depresión en niños con sobrepeso y obesidad: Resultados de un Campo de Verano. Summa psicol. UST (Impr.). 2010;7(2):67-74.

16. Pompa E, Montoya B. Evaluación de la manifestación de ansiedad y depresión en niños con sobrepeso y obesidad en un campo de verano. Psicol. Salud. 2011;21(1):119-24.

17. Panagiotopoulos C, Ronsley R, Al-Dubayee M, Brant R, Kuzeljevic B, Rurak E, Cristall A, Marks G, Sneddon P, Hinchliffe M, Chanoine JP, Mâsse LC. The centre for healthy weights--sha pedown BC: a family- centered, multidisciplinary program that reduces weight gain in obese children over the short-term. Int. J. Environ. Res. Public. Health. 2011;8(12):4662–78.

18. Murdoch M, Payne N, Samani-Radia D, Rosen-Webb J, Walker L, Howe M, Lewis P. Family-based behavioural management of childhood obesity: service evaluation of a group programme run in a community setting in the United Kingdom. Eur. J. Clin. Nutr. 2011;65 (6):764–7.

19. Martín CA, Robles R. Resultados preliminares de un programa de tratamiento integral para la obesidad en niños mexicanos. Rev. Mex. Investigación Psicol. 2012;4(1):50-7.

20. Alves JA, Fernandes D, Lopera CA, Rui A, Drieli V, Nardo N. Efectos de un programa multiprofesional de tratamiento de la obesidad sobre los factores de riesgo para síndrome metabólico en niños prepúberes, púberes y zadolescentes: diferencias entre géneros. Rev. Andal. Med Deporte. 2013;6(4):139-45.

21. Vásquez F, Díaz E, Lera L, Meza J, Salas I, Rojas P, Atalah E, Burrows, R. Impacto del ejercicio de fuerza muscular en la prevención secundaria de la obesidad infantil: intervención al interior del sistema escolar. Nutr. Hosp. 2013;28(2):347-56.

22. Danielsen YS, Nordhus IH, Júlíusson PB, Mæhle M, Pallesen S. Effect of a family-based cognitive behavioural intervention on body mass index, self-esteem and symptoms of depression in children with obesity (aged 7-13): a randomised waiting list controlled trial. Obes. Res. Clin. Pract. 2013;7(2):e116–28.

23. Guo H, Zeng X, Zhuang Q, Zheng Y, Chen S. Intervention of childhood and adolescents obesity in Shantou city. Obes Res. Clin. Pract. 2015;9(4):357–64.

24. Tárraga PJ, Tárraga ML, Panisello JM, Rosich N, Castell E, Carbayo JA. Resultados de una intervención motivacional con niños obesos o con sobrepeso y sus familias: Estudio Piloto. Rev. Esp. Nutr. Hum. Diet. 2017;21(4), 313-9.

25. Eren B, Akbayrak N, Arslan F. Assessment of a Health Promotion Model on Obese Turkish Children. J. Nurs. Res. 2017;25(6):436–46.

26. Pompa E, Castro L, Cabello ML. Intervención y seguimiento psicológico en un campamento de verano de niños con sobrepeso y obesidad en el norte de México. Interacción y perspectiva: Rev. Trab. Soc. 2018;8(2):150-66.

27. Eneritz A, Herrero L, Del Río P, Ibarguren A, Martínez E, Arrate J, Gravina L. Aplicación del programa "Niños en movimiento" a nivel de una comarca: primeros datos. Rev. Esp. Endocrinol. Pediatr. 2018;8(3):40-7.

28. Williams CF, Bustamante EE, Waller JL, Davis CL. Exercise effects on quality of life, mood, and self-worth in overweight children: the SMART randomized controlled trial. Transl. Behav. Med. 2019;9(3):451–9.

29. Tronieri JS, Wadden TA, Leonard SM, Berkowitz RI. A pilot study of acceptance-based behavioural weight loss for adolescents with obesity. Behav. Cogn. Psychother. 2019;47(6):686–96.

30. Norgren S, Danielsson P, Jurold R, Lötborn M, Marcus C. Orlistat treatment in obese prepubertal children: a pilot study. Acta Pediatrica, 2003; 92(6), 666–70.