



***REDUCTION OF CHILDHOOD
OBESITY VIA WEB-BASED
PROGRAMS.***

**Natalya Fazylova, DNP, FNP-BC,
Marie-Carmel Garcon, DNP, FNP-BC,**

Disclosure

- **Authors:**
- **Natalya Fazylova, DNP, FNP-BC,**
- **City University of New York School of Nursing**
- **Marie-Carmel Garcon, DNP, FNP-BC,**
- **Columbia University School of Nursing**

- **Learner objective:** Discuss effectiveness of web-based programs to decrease childhood obesity

- **We have no conflict of interest and received no sponsorship, financial or commercial support.**

Childhood Obesity

Background:

- Childhood obesity is one of the most serious public health challenges of the 21st century, particularly in urban settings. The prevalence has increased at an alarming rate globally. (The International Obesity Taskforce (IOTF 2011).
- IASO estimate that up to 200 million school aged children are either overweight or obese, of those 40-50 million are classified as obese.

Childhood Obesity

- Health Risk: Childhood obesity is associated with a higher chance of obesity, premature death and disability in adulthood (WHO 2009)
- If overweight begins before eight years of age, obesity in adulthood is likely to be more severe. (An, J., et al, 2009).
- Overweight and obesity now ranks as the fifth leading global risk for mortality

Childhood Obesity

Economic burden:

- Direct medical costs of obesity include preventative, diagnostic and treatment services related to overweight and associated co-morbidities.
- European nations spend 2-8% of their health care budgets on obesity, equating to 0.6% of gross domestic product (GDP). (Müller-Riemenschneider, et al 2008).
- In the USA, estimates based on 2012 data indicated that overweight and obesity account for \$147 billion in total medical expenditure (Finkelstein et al, 2012). This is an increase from 2000 for \$117 billion.

Childhood Obesity

- Technology has become part of our children's life in the last decade; providing the foundation to a large number of daily activities.
- The popularity of social media and technology among our school-age children may assist in providing a fruitful hub for treatment, intervention, and prevention efforts to address childhood obesity.

Next Steps

Focused Clinical Question

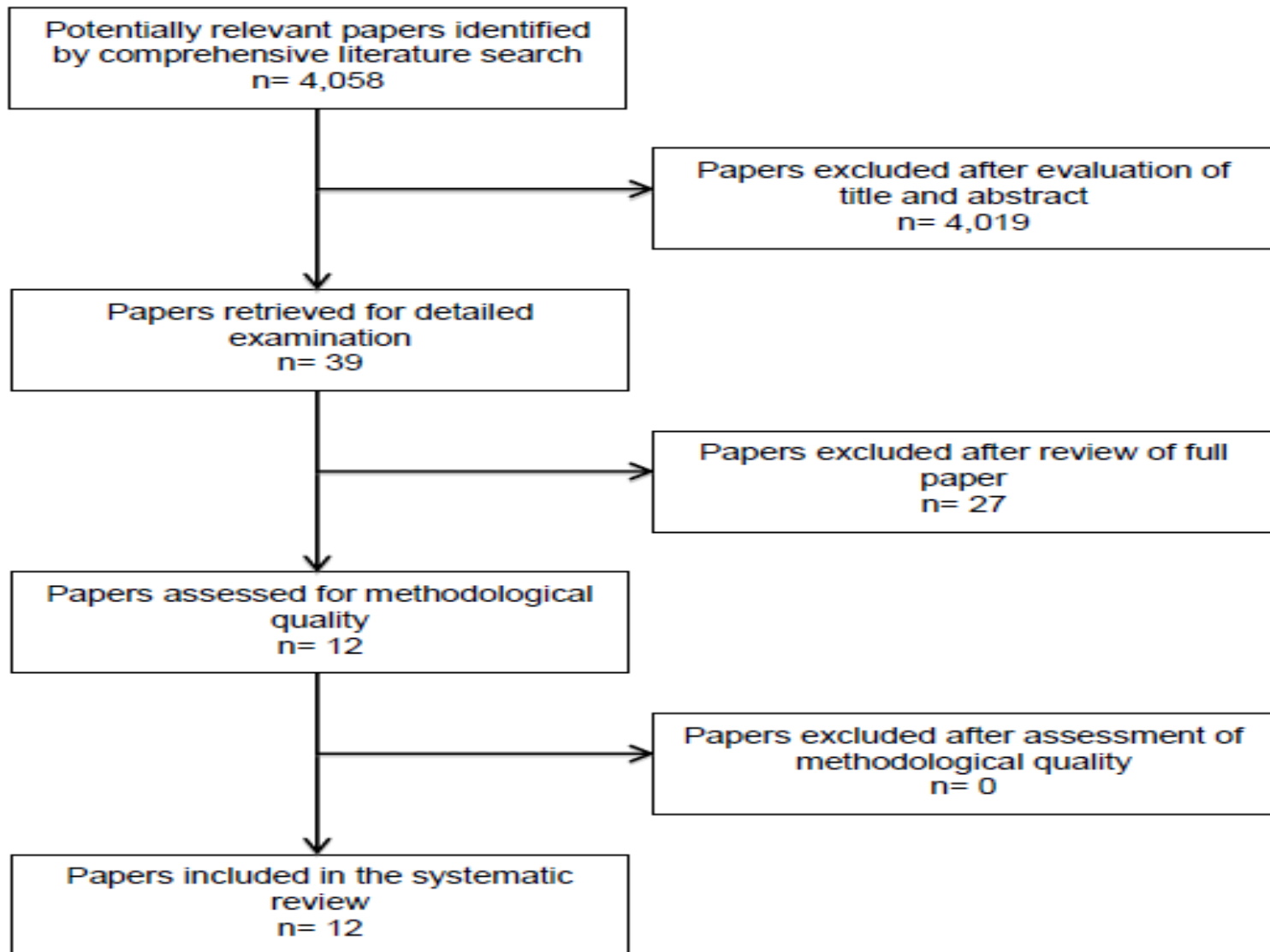
P-school aged children 6-18 years

I- technology

C-current standard of care

O- decrease in obesity AEB decrease in BMI, waist circumference and decrease in percentage body fat

Review Results



ARTICLES	INTERVENTION	BMI	BMZ	WAIST CIRCUM.	WEIGHT
Celio, 2005	The intervention included cognitive-behavioural weekly programme targeting behavioural weight loss and body image improvement, weekly newsletter with personalized feedback and asynchronous discussion group; and online health education materials related to food, weight loss, body image and physical activity.	(++)	(++)	N/A	
Chen, 2011	The web based program consisted of activities to enhance self-efficacy of adolescents and facilitate their understanding and use of problem solving skills related to nutrition, physical activity and coping	(- -)	(- -)	(++)	
Doyle, 2008	A 16-week, internet delivered program which incorporated cognitive-behavioral techniques.	(- -)	(+ +)	(- -)	
Ezendam, 2012	A computer tailored intervention was made assessable through the internet consisting of 8 modules addressing issues of weight management and energy balance-related behaviors. Computer-tailored education included: increase physical activity, reduce sedentary lifestyle, increase fruits, vegetables and whole wheat bread and reduce sugar beverages.	(- -)	N/A	(- -)	
Jago, 2006	473 participants aged 10 to 14 year-old boy scouts from Houston, Texas, USA were recruited from 42 boy scout troupes. Participant received a 9 week internet program to increase physical activity, self efficacy and goal-setting during 2003.	(+ +)	N/A	N/A	
Jones, 2008	The program combined psych education and behavioral interventions including self-monitoring, goal setting, awareness of appetite triggers. The on-line interactive program involved journals of a diet log, weight, physical activity and personal thoughts and goals.	(+ +)	(+ +)	N/A	
Williamson, 2005	The internet based behavioural intervention consisted of nutritional education and internet counselling behaviour modification program that targeted the lifestyle, physical activity and eating habits of the specific information such as recipes for food commonly eaten by African Americans.	(+ +)	N/A	N/A	
Williamson, 2006	Same as Williamson, 2005				
O'Donohue, 2011	The control condition received web-based psych education plus individually tailored, family based, behavioral weight control skills training.	N/A	(- -)	N/A	

Discussion

- Web-based interventions: positive impact
- Parental involvement
- Face-to-face interaction
- Culturally sensitive interventions

Limitations of Review

- Small sample size
- Lack of insight on cultural impact
- Short study interval
- Long term sustainability
- Adherence rate

Implication for practice

- Promising (short-term) outcomes for web-based intervention
- Further support needed for:
 - Parental involvement
 - Reinforcement/reminders to increase adherence
 - Face-to-face counseling

Implications for Research

- Longer studies (> 24 months)
- Larger sample size
- Impact on parental involvement
- Impact due to culturally tailored interventions



o Questions?

References

- World Health Organization. Global strategy on diet, physical activity and health: Childhood overweight and obesity [homepage on the Internet]. 2010 [cited 2012, May 24]. Available from: www.who.int/dietphysicalactivity/en/
- International Association for the Study of Obesity. About Obesity [homepage on the Internet]. n.d. [cited 2012, May 29]. Available from: <http://www.iaso.org/policy/aboutobesity/>
- Michigan Quality Improvement Consortium. Treatment of childhood overweight and obesity. [homepage on the Internet]. 2010 [cited 2012, April 15]. Available from: <http://www.guideline.gov/content.aspx?id=23867&search=treatment+of+childhood+overweight+and+obesity>
- World Health Organization. Obesity and Overweight. Fact Sheet No. 311 [homepage on the Internet]. 2012 [cited 2012, April 18]; Available from: <http://www.who.int/mediacentre/factsheets/fs311/en/>
- Center for disease control. Healthy people 2010 executive summary final review. [homepage on the Internet]. 2010 [cited 2012 May 29] Available from: www.cdc.gov/nchs/.../hp2010_final_review_executive_summary.pdf
- The Center for Disease Control and Prevention. Basics About Childhood Obesity [homepage on the Internet]. 2012 [updated April 27]; Available from: <http://www.cdc.gov/obesity/childhood/basics.html>
- An JY, Hayman LL, Park YS, Dusaj TK, Ayres CG. Web-based weight management programs for children and adolescents: A systematic review of randomized controlled trial studies. *Advances in Nursing Science*. 2009;32(3):222-40.

References

- American Academy of Child and Adolescent Psychiatry. Facts for families: Obesity in children and teens [homepage Internet]. 2011 [cited 2012, April 18]. Available from: http://www.aacap.org/cs/root/facts_for_families/obesity_in_children_and_teens
- Studebaker A, LaTourette K. Childhood obesity: Fighting for our future. [homepage on the Internet]. 2011 [cited 2012 April 17]. Available from: http://www.calpoly.edu/~jgphelan/_Media%20Assets/white%20papers/White%20Paper-Amber%20and%20Kelsey.pdf
- Müller-Riemenschneider F, Reinhold T, Berghöfer A, Willich SN. Health-economic burden of obesity in Europe. *European Journal of Epidemiology*. 2008;23(8):499-509.
- Finkelstein EA, Trogon JG, Cohen JW, Dietz W. Annual medical spending attributable to obesity: payer- and service-specific estimates. *Health Affairs*. 2009;28(5):w822-w31.
- The Assistant Secretary for Planning and Evaluation; The U.S. Department of Health and Human Services. Childhood Obesity [homepage on the Internet]. n.d. [cited 2012 April 17]. Available from: http://aspe.hhs.gov/health/reports/child_obesity
- Centers for Disease Control and Prevention. School health guidelines to promote healthy eating and physical activity [homepage on the Internet]. 2011 [cited 2012 April 17]. Available from: <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6005a1.htm>
- Haerens L, Deforche B, Maes L, Stevens V, Cardon G, De Bourdeaudhuij I. Body Mass Effects of a Physical Activity and Healthy Food Intervention in Middle Schools. *Obesity*. 2006;14(5):847-54.

References

- Gortmaker SL, Peterson K, Wiecha J, Sobol AM, Dixit S, Fox MK, et al. Reducing obesity via a school-based interdisciplinary intervention among youth: Planet health. *Archives of Pediatrics and Adolescent Medicine*. 1999;153(4):409.
- Sallis JF, McKenzie TL, Conway TL, Elder JP, Prochaska JJ, Brown M, et al. Environmental interventions for eating and physical activity: A randomized controlled trial in middle schools. *American Journal of Preventive Medicine*. 2003;24(3):209-17.
- Carlson J, Sallis J, Ramirez E, Patrick K, Norman G. Physical activity and dietary behavior change in internet-based weight loss interventions: Comparing two multiple-behavior change indices. *Preventive Medicine*. 2012;(54):50-54.
- Healthy People.gov; The U.S. Department of Health and Human Services. Health Communication and Health Information Technology [homepage on the Internet]. 2012 [cited 2012 May 20]. Available from: <http://healthypeople.gov/2020/topicsobjectives?2020/overview.aspx?topicid-18>
- Gruwell CA. Evolution of the web revolution. *Medical Reference Services Quarterly*. 2007;26(3):85-90.
- Antwi F, Fazylova N, Garcon MC, Lopez L, Rubiano R, Slyer JT. A systematic review of the effectiveness of Web-based programs on the reduction of childhood obesity in school aged-children. *Joanna Briggs institute* 2013;74(1):114-117.