Journal of Natural Sciences Research www.iiste.org
ISSN 2224-3186 (Paper) ISSN 2225-0921 (Online)
Vol.8, No.2, 2018

What Role Does Curriculum Play in Reducing Students' Obesity in Australia Secondary Schools and What Are the Implications for Saudi Arabia?

Luyun Mohammed Salah Althubayt
Master student, International Curriculum Studies
Representative of the second secondary in Abha, Saudi Arabia

1. Introduction

There is a growing body of literature that recognises the importance of curriculum in promoting extracurricular activities and physical education. Promoting physical activity in high schools helps to reduce the rates of obesity in addition to eliminating risk factors for other ailments associated with the lack of physical activity, such as cardiovascular diseases. Recent evidence suggests that a school's curriculum is the best vehicle for delivering physical education for school going children at all academic levels. However, research has consistently shown that in order to reap maximum benefits, teachers conducting physical education must balance physical education time so that they can avail sufficient time for physical activities. Furthermore, teachers and leaders of academic institutions are advised to lead by example, thus entailing the promotion of habits that encourage healthy lifestyles, such as eating healthy foods and doing physical exercises on a regular basis, preferably, in the company of children.

The issue of obesity has grown in importance recently in Australia as policymakers report that Personal Development, Health and Physical Education (PDHPE) especially in secondary schools is not enough to reduce the rates of obesity (Ward-Begnoche, Gance-Cleveland, Harris, & Dean, 2008). One observer has previously drawn attention to the paradox of physical education and physical activity in high schools. Physical education requires sufficient time to be spent lecturing students on the health benefits of exercise, yet simultaneously, competes with the time allocated to exercise. However, in the Saudi Arabian context, a major obstacle is that there is no clear promotion of physical activity and healthy eating habits to high school students, something that has significantly contributed to rising rates of obesity in secondary schools.

Investigating the role of curriculum in reducing the high rates of obesity in Australia and Saudi Arabia is a continuing concern for key educational policy makers as they continue to make persistent efforts to reduce this condition. A much-debated question is whether PDHPE is indeed promoting physical activity and healthy eating in schools. Previous studies of the role of PDHPE in reducing obesity in Australia and Saudi Arabia have not dealt with a number of environmental and social changes which have limited children's access to safe places where they can walk, play, and bike. In Saudi Arabia, for example, there are numerous traffic dangers in the neighbourhood in addition to the lack of proper sidewalks for children to ride bicycles to and from school. This decrease in active transport for children in Saudi Arabia has contributed to the high levels of obesity being experienced right now. This paper attempts to show that curriculum plays a vital role in reducing the rates of obesity in secondary schools and will compare the literature that reports the effects of physical education in Australia and Saudi Arabia in reducing the rates of obesity.

2. Promoting the benefits of physical activity as being full of fun, and enjoyment and offering opportunities for socialization

There is evidence that physical education plays a crucial role in reducing obesity, especially for school going children. Traditionally, it has been argued that school-sanctioned physical exercise has numerous health benefits including eliminating risks associated with cardiovascular ailments, and that, regular exercise helps to build and maintain healthy muscles and bones (Dollman, Boshoff, & Dodd, 2006). A curriculum that incorporates this principle contributes to encourage students in high schools to participate in physical activity, especially in the promotion of sporting activities within the school. Other studies indicate that promoting physical activities is necessary for reducing feelings of anxiety and depression, as well as helping a child to become more attentive in class. There are also long-term consequences of lacking physical activity which include an increased chance of premature death, developing diabetes, developing colon cancer, as well as high blood pressure.

Budd & Volpe's, comparative study (2006) found that schools can approach physical activities using a variety of strategies. These include ensuring that physical education and physical activity are balanced so that teachers do not spend too much time on the former over the latter. Detailed examination of the role of PDHPE in reducing obesity in Saudi Arabia by Riggs, Sakuma, & Pentz, (2007) showed that the Kingdom's school curriculum does not maintain a strong physical education program that engages all the students in moderate to vigorous physical activities. The researchers noted that at least 50% of the time spent in physical education was done in class instead of being engaged in physical activity (Riggs, Sakuma, & Pentz, 2007).

In the Australian context, the curriculum helps Australian schools to create an infrastructure as well as policies, which increase access to physical activity, as well as helping students to be motivated when participating in physical activities and programs in the school. It is important, however, for Australian PDHPE teachers to collect valid as well as reliable data on a continuous basis using analytical systems which are effective for changing behaviours related to physical activity and ultimately contributing to the well-being of high school students. Studies such as that conducted by Riggs et al. (2007) indicate that providing a variety of physical activities as well as essential and concrete skills to students in Australian secondary schools can encourage students to be physically active not only during the class, but also throughout the day. Furthermore, policymakers should ensure that schools have qualified PDHPE professionals who are both properly trained in the up-to-date physical activities and have appropriate skills that can detect barriers to physical education and physical activity.

Curriculum plays a significant role in ensuring that physical activity for students is provided through a comprehensive fitness program that matches the physical exercise needs of high school students (Shaibu et al., 2012). Such a program should be anchored on a quality physical education program and should be complemented by activities happening before school, during school, and after school. This program can be spread properly to include other physical activity breaks, interscholastic sports, as well as bicycling and walking to school initiatives. The infrastructure would include having proper places for physical education as well as reinforcing the valuable lessons that are taught in physical education through providing opportunities to apply and practise all the skills that have been learned (Riggs et al., 2007; Fritz, 2007).

Although the approaches of physical education in Australia seem to focus only on interventions that are only school related, experts say that the community should also be more involved in promoting PDHPE (Leahy & Harrison, 2008). Schools provide an important setting because they have access to young people for the most time of the day. The Centre for Disease Control, in a recent study, reviewed the literature on the impact of education-related outcomes for school-based physical education, classroom-based physical activity, as well as extracurricular activities. In their findings, the researchers report that students who spend more time on physical activities showed a significant increase in academic performance, with 11 of the 14 studies on school-based physical education reviewed showing a more positive association between physical education intervention and performance in academic research. Out of nine papers reviewed on physical activities studies, eight of them found positive associations between physical activity and learning activities, especially if there are sufficient breaks for physical activities. The studies also indicated an increase in cognitive behaviours.

School leaders have a lot of concerns related to the cost of establishing physical education in schools. They claim that physical education and the facilities that are required to promote physical activity in a holistic way are too expensive and that establishing such an infrastructure in a school is way beyond school most budgets. This makes sense in one way because of most high school students, especially boys require physical exercise that is beyond simple body exercises such as running and stretching in the fields.

Studies such as that conducted by Blom-Hoffman, Wilcox, Dunn, Leff, & Power (2008) showed that most male students prefer to workout in gyms or engage in physically challenging sporting activities. However, despite these professional equipments and infrastructure being suitable for students, the issue of its potential to escalate budgets should not be a major concern because there is an easy workaround for this problem. For example, gymnastic equipment can easily be assembled from locally available materials that are recyclable.

3. Integrating specific lessons to reduce sedentary behavior, as well as identified on-screen leisure activities

Cross-section observations indicate that there is a positive association between physical activities and academic performance. Literature such as that done by Duncan, Birch, & Woodfield (2012) shows that there is there is a positive correlation between physical exercise and academic performance. Physical activity helps the brain to be more alert according to Duncan, Birch, & Woodfield (2012). When a person is alert, it becomes easy to concentrate for extended periods without mental fatigue. This form of concentration according to the researchers leads to positive classroom behaviour and increased memory performance. Understanding the connection between physical activity and mental performance offers a solid framework for policymakers to ensure that PDHPE programs are able to reduce or eliminate the sedentary behavior for students at all academic levels (Gard, 2008). These strategies should include active play within schools, active transport from and to schools, as well as engaging communities and families of the students to support these initiatives. Instead of taking the bus or going to school by car, students can be encouraged to cycle or walk to school. The PDHPE curriculum should include support for facilities that allow students to spend their time outside the classroom in an environment that encourages movement and interactive interaction with peers but is also safe (Lacy et al., 2012).

Recently, there has been renewed interest on how the curriculum can aid in balancing the time spent on sedentary behaviour with physical activity in order to fight obesity amongst high school students. There are numerous studies showing that spending too much time on sedentary activities without enough exercise is one of

the leading causes of obesity (Lee, Contento, & Koch, 2013). This should not come as a surprise considering that most high school students spend most of their time sitting in class to attend the studies the total time devoted to sedentary activities should properly be balanced by the total time devoted to physical activities in order to allow student enough time for workouts and exercise. Therefore, connections between curriculum and health tend to be self-reporting based on screening based survey activities (Manzo, 2008).

4. Active participation in physical education and physical activity

Physical education in Australian and Saudi Arabian schools needs revision, as the available literature indicates. In particular, sports lessons do not offer enough physical or strenuous activity to reduce obesity. According to a study done by Shelley, O'Hara, & Gregg, (2010), most teachers end up talking too much and giving very little time to any meaningful physical activity. In most of the schools that were visited by the researchers, it was identified that students were not sufficiently challenged because teachers did not have high expectations for them. It was found that schools that had the best physical education provision allowed students to achieve well academically as a result of an increasing range of extracurricular activities, as well as traditional physical activities. However, the article found that only a marginal number of schools played competitive sport at a high level. It was recognised that there was a need to commission a follow-up report to examine some of the more competitive sports, as well as ideal extracurricular activities. The report further found that the Departments of Education in both Australia and Saudi Arabia needs to build on the improvements made to physical education, as well as harness, the momentum and interest that some of the schools have shown. This calls for a reinvigoration of the school curricula of these countries to ensure that those who are responsible for the first training of high school teachers have provided teachers with enough subject knowledge which will allow them to teach physical education in the appropriate manner (Johnston et al., 2013). The curricula should help teachers to improve the fitness of the students by helping them to remain active in between lessons as well as encourage high intensity and vigorous activities for a sustained period of time. If teachers identify that some students are capable of achieving more in their physical activities or sports, then teachers should place high expectations on the students (Shelley et al., 2010).

5. Strengthening the school nutrition and physical activity programs

Role modelling is an important factor in maintaining fitness. In a follow-up study, Bruss et al, (2010) found that one of the ways to strengthen school nutrition and physical activity programs is to foster role modeling, as well as nutrition and enjoyment of physical activity by parents and teachers alike. Parents, additionally, have a bigger role to play in preventing childhood obesity from infancy. Bruss et al.'s (2010) comparative study found that breastfeeding a child during the early years of life goes a long way in preventing these children from becoming obese when they reach their teenage years. This is despite the availability of several factors, which may significantly impact on the role of parenting in reducing the rates of obesity during teenage years and especially in high school when children are away from parents. Good parenting includes showing children the importance of physical activities early enough (Costley & Leggett, 2010).

Significant analysis and discussion on the point mentioned previously was presented by (Lee & Macdonald, 2010). The most likely causes of obesity in later teenage years were noted to be poor diet and lack of exercise as early as during childhood years. According to Lee & Macdonald, (2010), children who establish healthy lifestyles early enough in their early childhood years are likely to carry on with these habits not just throughout their school lives, but also into adulthood. The childcare and preschool settings can actively engage the child in and guide the child to develop a varied and healthy diet using no coercive persistence. Parents and other caregivers alike can additionally teach children to eat reasonable quantities of food through the controlling of portion sizes as well as encouraging children to stop eating more food than they need. Although young children seem to have the ability to choose naturally appropriate portions of sizes of the food that they want to eat, research indicates that these children may become more responsive to external cues as early as the age of six years meaning that they will become more prone to eating anything that they are presented with, regardless of safety cues which may signal that they are full (Cliff & Wright, 2010).

As children become adults, they begin making their own choices at school and at home or other settings. Consequently, they may increasingly become stressed by the choices of food that the family makes, especially on purchasing. This is where parents should promote the habit of selecting healthy foods by making nutritious foods be available at home as well as encouraging family meal times. According to studies done by researchers, families that eat together significantly influence adolescent and older children to consume fruits, grains, vegetables, and calcium-rich foods (Massey-Sokes & Meaney, 2006). These studies help us to understand the link between early childhood parenting and obesity amongst high school students.

The curriculum eliminates obesity because it allows teachers to play an active role in a student's life by promoting physical activity through effective PDHPE programs. Teachers are however encouraged to act as role models to avoid the young people from receiving mixed messages. Instances of mixed messages happen when

policies related to healthy eating and practices at the school do not mirror what the students observe the staff doing. This means that the curriculum should allow the teaching staff opportunities to be continuously educated, as well as provided with the latest resources on how to be the best example for youth in matters regarding healthy diets and eating habits. For example, physical education teachers could eat together with students in order to send the message of a healthy snack or meal as well taking the opportunity to explain the benefits of healthy eating. When one is eating with the students, one can talk to them about the foods that they consume on a daily basis. If a particular day's menu contains new vegetables and fruits, for example, a health and physical fitness teacher can take this opportunity can talk about the benefits of such fruits and vegetables with the students as they eat together. This can start a conversation and reinforce the aspect of healthy eating. It is important for teachers to remain positive because young people, especially adolescents, are excellent at picking up body language and negative cues as well as being overly sensitive to negative messages (Cliff & Wright, 2010; Repovich, 2011; Fitzpatrick, 2011; Millar et al., 2011).

A crucial point to remember is that active and negative comments from teachers, especially on matters regarding diet, can significantly affect the student's perception and belief about the foods that they are consuming. This means that teachers should completely avoid talking negatively about certain foods, and instead focus on how to consume healthy foods due to the essential nutrients that they provide the body with. It is imperative to talk with childern about the benefits of food, such as how healthy foods can give them a sharp mind, more energy, and allow them to be more active as well as enable them to stay focused in school. Students should additionally be encouraged to eat healthy foods and maintain physical fitness because proper physical exercise helps the students to know the level of intensity of moderate as well as vigorous activities in addition to referring to activity intensity when they participate in physical education lessons. The curriculum should allow students to develop communication, to cope, and self-esteem skills because these can lead to an improvement in the body image and reduce any disordered eating behaviours (Gellar et al., 2012).

6. Increasing the opportunity for students to engage in physical education

A curriculum that encourages sports and physical activities would ensure that the whole program is not about competition or winning. This can be a bit difficult if a teacher is a competitive person. However, it is also important to remember students in most cases do not excel unless they are in a competitive environment (Green, 2012). This is predominantly the case for those students who are naturally gifted in physical education and physical activities. If a teacher wants students to care about healthy eating and being in top shape, then the teacher should instead create games that are fun and empower the students as well as involve everyone without necessarily turning this into a competition. It is also important that the teacher becomes a good example and role model because a teacher who is not fit can communicate conflicting messages to students. The teacher should work out at school and show students how to take care of their own bodies and have fun at the same time. This will encourage students to respect to their teacher (Bindler et al., 2012).

Despite studies such as that conducted by Ward-Begnoche, Gance-Cleveland, Harris, & Dean (2008) scholars claiming that most people have very short attention spans, this should not restrict the teacher. Instead, one should create an environment that engages the students. For example, a physical education teacher can conduct physical education in the fields to allow an easy demonstration of certain physical activities while offering students an opportunity to practice these activities in the open field. It has been shown that teachers who are aggressive when teaching physical education and physical activities encourage students to be attentive while at the same time allowing them to express themselves verbally. Ward-Begnoche, Gance-Cleveland, Harris, & Dean, (2008) argue that most teachers have additionally expressed frustration in getting students to participate in an active physical education session or physical activities. It should, however, be noted that the frustration comes from the use of poor techniques when attempting to get the attention of students. Some of the recommended ways to get the attention of students include stopping activities by using a whistle, efficient use of visual signals such as lifting your hand when getting everyone's attention, using a megaphone or a loudspeaker, especially if the class is large, requiring participants to move where there are open spaces, and asking students to sit down and face the teacher when the instructor is explaining instructions or talking (Ward-Begnoche, Gance-Cleveland, Harris, & Dean, 2008).

7. Quantitative studies on obesity rates in Saudi Arabia high schools

The PDHPE programs in the Saudi Arabian curriculum

In Saudi Arabia, the education curriculum does not offer PDHPE. High school boys' students fail to have appropriate health education despite having physical education, according to recent studies. On the other hand, the survey done by Bindler et al., (2012) reveals that girls in high schools have health education, yet lack appropriate physical education. The curriculum does not provide an opportunity to enhance engagement in physical activity due to the lack of a formal physical education system. Children in Saudi Arabia lack the benefits that come with PDHPE. These include an improved metabolic profile as well as psychological

wellbeing. This increases the risks of having obesity as well as other ailments associated with a lack of physical activity such as cardiovascular ailments.

This supports other studies, such as that done by Al-Rukban (2003), which indicate that Saudi Arabian children lack the knowledge of safe and healthy living and positive hygiene.

After comparing curriculum standards in both Australian and Saudi Arabian schools, the literature reveals that childhood obesity continues to be the most serious public health challenge of these two countries in the 21st century. A cross-sectional study conducted by Al-Nozha et al., (2005) attempted to determine the prevailing rates of obesity and overweight incidences, in addition to analysing several factors which may be related to these, in high school students aged between 12 to 19 years in 10 schools in Riyadh. A self-administered questionnaire was used to collect data on the weight and height of each selected student being measured and the body mass index being calculated. Al-Nozha et al. had a response rate of around 94.6%, 53.8% of whom were male students. Among the male primary school students, 17.4% and 7.3% was the proportion of obesity and overweight whereas 20.9% and 12.4% was the equivalent among female students. Overall, 9.7% was the average prevalence rate of overweight students while 19% was the prevalence rate obesity among primary school students in Riyadh. The conclusion drawn from this research indicates that there was a significant rate of evidence-based information on the important prevalence of childhood obesity and overweight among high school students in Riyadh.

In another study conducted by Al-Rukban (2003), the researcher attempted to estimate the prevailing rate of obesity among female elementary school students, as well as associated risk factors. Healthy high school female students between grades 4 to 6 were surveyed in the cross-sectional study between the years 2006 and 2007. Four private schools in Northwest Riyadh in Saudi Arabia were selected where many high school income families had enrolled their daughters. The total students included in the study were 1200. To collect data, researchers used a predesigned and validated questionnaire. The weight and height of the students were measured, and the body mass index was calculated. The students were categorized as non-obese and obese depending on the body mass index of the age scale. 1072 students participated in the study with the response rate being 89.4%. Among 14.90% of the students, researchers noted that there were high prevalent rates of obesity.
The researchers observed that the proportion of students who were obese increased inversely by age and the school grade ($P < 0.001$).

8. Quantitative studies on obesity rates in Australian schools

PDHPE programs in the Australian curriculum

The Australian curriculum, and particular PDHPE, has the goals of ensuring the personal, health, and physical education development for all school attending children at all academic levels. In addition to this, the curriculum ensures the prevention of obesity, friendly competition, and physical activity. Through PDHPE, students have the opportunity of developing and understanding the changes in their bodies as well as their physical, social, emotional, and cognitive development. At all academic levels, PDHPE ensures that children have the knowledge to make informed decisions in regards to their lifestyle decisions, proper hygiene, and how to prevent diseases. Physical education is the priority of PDHPE. It ensures that the physical requirements of children are met in addition to promoting their well-being through teaching essential skills that allow children to be physically active. Despite these positive initiatives, 21 % of boys and 19% of girls who are aged between 2 to 3 years have been considered as obese in Australia according to recent studies (Al-Nozha et al., 2005). This indicates that there is a need for parents to teach their children about good and healthy lifestyles in order to prevent obesity during the infancy stage.

A study was conducted by Millar et al., (2011) whose objective was to examine the pertinent intake of key beverages and foods in children aged between 4 to 12 years, as well as the association of these with the weight status. The researchers used a computer-assisted telephone interview to establish the intake of vegetables, fruits, parked snacks, fast foods, as well as sweetened drinks. This was based on 'usually' and 'yesterday' as reported by guardians and parents in the representative sample, made up of 2184 students from the Southwest region of Victoria in Australia. The results indicated that the children who consumed more than 2 to 3, more than 3 to 4, and more than four servings of drinks/juice yesterday (meaning the previous day) were respectively 1.8 (96% confidence interval (CI) 1.2 to 2.2), 1.8 (96% CI 1.2 to 2.5) and additionally 2.1 (98% CI 1.5 to 2.9) times more likely to be considered obese/overweight compared to children who had no servings of drinks/fruits 'yesterday', adjusted for gender, age, and social economic status. Further to this, those children who had more than three servings of soft drinks 'yesterday' were 2.2 (96% CI 1.3 to 3.9) more times likely to be obese/overweight compared to those children who drank these beverages at least once per week, adjusted for gender, age, and socioeconomic status. Despite the regular consumption of fast foods and parked snacks, the researchers did not find any association between the ingestion of these foods and the weight status. The researchers concluded that an intake of sweetened beverages to have significant links with obesity and overweight in this population of Australian schoolchildren. Additionally, the study recommended that this should be constituted as a budget for intervention programs which would be aimed at preventing in unhealthy gain overweight in children. The study

aimed at providing and exploring in associations between weight perceptions, obesity, and gender, culture, ethnicity, and social class in this large Australian school children. This is important in helping to determine how these children become obese and how their habits contribute to obesity in high school. High school and primary (N = 7) were recruited from every territory and state of Australia read on inclusion of 7889 children from private, government, and Catholic schools (83% response rate) between August and November 2006.

9. Conclusion

This paper has found that that there is available literature that recognizes the significance of the curriculum especially in encouraging extracurricular activities and physical education in high schools. Promoting physical activity for school going children eliminates the risk factors that are associated with other ailments such as cardiovascular diseases. In general, therefore, it seems that the curriculum has an advantage because it is the best vehicle for delivering physical education. However, it is important for teachers of physical education to balance between the times spent enlightening students on the importance of exercise and actually conducting the physical activity. Furthermore, role modelling is important because research has indicated that students are likely to respond to learning according to the behaviour of their teachers. Role modelling is the act of promoting habits that encourage how the lifestyles through physical activity and healthy eating. A major obstacle being faced is that the curriculum does not offer any clear promotion strategies for sports and physical activities as well as personal development in Australian and Saudi Arabian schools. This has led to more investigation on the importance of the curriculum in reducing the high rates of obesity in Australian and Saudi Arabian schools as well as encouraging policymakers to continue to put persistent efforts to ensure that all schools adopt proper PDHPE programs. The paper has identified that the role of the curriculum in promoting PDHPE in Saudi Arabia has not extensively been studied. This laxity has led to a lack of efforts in dealing with a number of environmental and social changes that have limited the access of children to opportunities that encourage physical activity. As a result, the decrease in active transport for children to school and from school in Saudi Arabia has contributed to the high levels of obesity that are being experienced by the Kingdom. These findings enrich our understanding of the role of the curriculum in promoting PDHPE programs in high schools.

10. References

Al-Nozha, M. M., Al-Mazrou, Y. Y., Al-Maatouq, M. A., Arafah, M. R., Khalil, M. Z., Khan, N. B. et al. (2005). Obesity in Saudi Arabia. *Saudi medical journal, 26*(5), 824-829.

Bindler, R. C., Goetz, S., Butkus, S. N., Power, T. G., Ullrich-French, S., & Steele, M. (2012). The Process of Curriculum Development and Implementation for an Adolescent Health Project in Middle Schools. *Journal of School Nursing, 28*(1), 13-23.

Blom-Hoffman, J., Wilcox, K. R., Dunn, L., Leff, S. S., & Power, T. J. (2008). Family Involvement in School-Based Health Promotion: Bringing Nutrition Information Home. *School Psychology Review, 37*(4), 567-577.

Bruss, M. B., Dannison, L., Morris, J. R., Quitugua, J., Palacios, R. T., McGowan, J. et al. (2010). Teachers as Partners in the Prevention of Childhood Obesity. *International Journal of Education Policy and Leadership, 5*(2), 1-12.

Budd, G. M. & Volpe, S. L. (2006). School-Based Obesity Prevention: Research, Challenges, and Recommendations. *Journal of School Health, 76*(10), 485-495. doi: 10.1111/j.1746-1561.2006.00149.x

Cliff, K. & Wright, J. (2010). Confusing and Contradictory: Considering Obesity Discourse and Eating Disorders as They Shape Body Pedagogies in HPE. *Sport, Education and Society, 15*(2), 221-233.

Costley, K. C. & Leggett, T. (2010). *Childhood Obesity: A Heavy Problem*. Online Submission,

Dollman, J., Boshoff, K., & Dodd, G. (2006). The relationship between curriculum time for physical education and literacy and numeracy standards in South Australian primary schools. *European Physical Education Review, 12*(2), 151-163.

Duncan, M., Birch, S., & Woodfield, L. (2012). Efficacy of an Integrated School Curriculum Pedometer Intervention to Enhance Physical Activity and to Reduce Weight Status in Children. *European Physical Education Review, 18*(3), 396-407.

Exploratory Research to Design a School Nurse-Delivered Intervention to Treat Adolescent Overweight and Obesity. *Journal of Nutrition Education and Behavior, 44,* 46-54. doi: 10.1016/j.jneb.2011.02.009

Exploratory Research to Design a School Nurse-Delivered Intervention to Treat Adolescent Overweight and Obesity. *Journal of Nutrition Education and Behavior, 44,* 46-54. doi: 10.1016/j.jneb.2011.02.009

Fitzpatrick, K. (2011). Obesity, Health and Physical Education: A Bourdieuean Perspective. *Policy Futures in Education, 9,* 353-366. doi:10.2304/pfie.2011.9.3.353

Fritz, K. (2007). Fighting Obesity in 4-Year-Olds--"Move to Improve/Catch the Energy". *Strategies: A Journal for Physical and Sport Educators*, (2)*,* 17.

Gard, M. (2008). Producing Little Decision Makers and Goal Setters in the Age of the Obesity Crisis. *Quest, 60*(4), 488-502.

Gellar, L., Druker, S., Osganian, S. K., Gapinski, M. A., LaPelle, N., & Pbert, L. (2012).

Green, H. L. (2012). Integrating Nutrition into the Physical Education Curriculum. *Strategies: A Journal for Physical and Sport Educators,* (6), 16.

Johnston, C. A., Moreno, J. P., El-Mubasher, A., Gallagher, M., Tyler, C., & Woehler, D. (2013). Impact of a School-Based Pediatric Obesity Prevention Program Facilitated by Health Professionals. *Journal of School Health, 83*(3), 171-181. doi:101111/josh.1.2013

Lacy, K., Kremer, P., de Silva-Sanigorski, A., Allender, S., Leslie, E., Jones, L. et al. (2012). The appropriateness of opt-out consent for monitoring childhood obesity in Australia. *Pediatric obesity, 7*(5), e62-e67. doi:10.1111/j.2047-6310.2012.00076.x

Leahy, D. & Harrison, L. (2008). Weighing It up: Thinking about the Implications of School Based Obesity Prevention Initiatives. *ACHPER Australia Healthy Lifestyles Journal, 55*(1), 19-22.

Lee, H., Contento, I. R., & Koch, P. (2013). Using a Systematic Conceptual Model for a Process Evaluation of a Middle School Obesity Risk-Reduction Nutrition Curriculum Intervention: "Choice, Control & Change". *Journal of Nutrition Education and Behavior, 45,* 126-136. doi:10.1016/j.jneb.2012.07.002

Lee, J. & Macdonald, D. (2010). "Are They Just Checking Our Obesity or What?" The Healthism Discourse and Rural Young Women. *Sport Education and Society, 15*(2), 203-219.

Manzo, K. K. (2008). Schools Adapting Curriculum to the Outdoors. *Education Week, 28*(15), 1.

Massey-Sokes, M. & Meaney, K. S. (2006). Understanding Our Service-Learning Community: An Exploratory Study of Parent, Teacher, and Student Perceptions about Childhood Obesity. *Health Educator, 38*(2), 53-60.

Millar, L., Kremer, P., de Silva-Sanigorski, A., McCabe, M. P., Mavoa, H., Moodie, M. et al. (2011). Reduction in overweight and obesity from a 3-year community-based intervention in Australia: the 'It's Your Move!' project. *Obesity Reviews : an official journal of the International Association for the Study of Obesity*, *12,* 20-28. dio:10.1111/j.1467-789X.2011.00904.x

Repovich, W. E. (2011). Integrated, Articulated Fitness and Health Curriculum and Methods of Evaluation. *Forum on Public Policy Online, 2011(1),* p 16.

Riggs, N. R., Sakuma, K. L. K., & Pentz, M. A. (2007). Preventing Risk for Obesity by Promoting Self-Regulation and Decision-Making Skills: Pilot Results from the PATHWAYS to Health Program (PATHWAYS). *Evaluation Review, 31*(3), 287-310.

Robert Wood Johnson, F. (2012). Making the Grade: Reversing Childhood Obesity in School Districts Toolkit--What Is It? *Robert Wood Johnson Foundation*. P.O. Box 2316, Route 1 and College Road East, Princeton, NJ 08543.

Shaibu, S., Holsten, J. E., Stettler, N., Maruapula, S. D., Jackson, J. C., Malete, L. et al. (2012). Adolescent Obesity Prevention in Botswana: Beliefs and Recommendations of School Personnel. *Journal of School Nursing, 28*(3), 220-229.

Shelley, K., O'Hara, L., & Gregg, J. (2010). The Impact on Teachers of Designing and Implementing a Health at Every Size Curriculum Unit. *Asia-Pacific Journal of Health, Sport and Physical Education, 1*(3/4), 21-28.

Van Staveren, T. & Dale, D. (2004). Childhood obesity problems and solutions: food choices and physical activity, at school and at home, underlie the childhood-obesity problem. What role can schools play in finding a solution?. *JOPERD—The Journal of Physical Education, Recreation & Dance*, (7), 44.

Ward-Begnoche, W. L., Gance-Cleveland, B., Harris, M. M., & Dean, J. (2008). Description of the Design and Implementation of a School-Based Obesity Prevention Program Addressing Needs of Middle School Students. *Journal of Applied School Psychology, 24*(2), 247-263.