International Journal of Innovation and Research in Educational Sciences
Volume 7, Issue 5, ISSN (Online) : 2349–5219

Effects of Social Support and Music on Exercise Adherence and Enjoyment in Children

Callie Lambert, Holly Kihm*, Edward Hebert, Heidi Kulkin and Ryan Green
Southeastern Louisiana University, Hammond, LA, USA.
*Corresponding author email id: holly.kihm@selu.edu

Date of publication (dd/mm/yyyy): 09/10/2020

***Abstract* – The purpose of this study was to determine if the presence of social support and music affected exercise performance and enjoyment among school-aged children. Fifteen children ages 6-13 years participated in the study. Enjoyment and performance were measured while the children performed four different exercises including wall sits, planks, squats, and bunny hops. During each exercise, four different genres of music were played in the lab (classical, classic rock, folk/zydeco, and kidz bop). The effects of these two factors were examined on heart rate, time spent performing each exercise, and responses to an enjoyment scale completed after each session. The results indicated that the presence of social support and upbeat music promoted better exercise enjoyment and performance.**

***Keywords* – Social Support, Music, Exercise, Adherence, Children.**

I. INTRODUCTION

A. *Review of Literature*

Childhood obesity is a major health concern among scientists and parents. The prevalence and severity of childhood obesity has increased significantly over the past four decades (Kelsey, Zaepfel, Bjornstad, & Nadeau, 2014). According to the American Heart Association (AHA), one in every three children and adolescents are considered overweight or obese (AHA, 2016). There is a 20% obesity rate among children ages 2 to 19 years old. Broken into age groups, 14% of children ages 2-5 years are obese, 19% of children ages 6-11 are obese, and 21% of 12-19 year olds are obese (Ogden et al., 2016). Overweight status is defined as having a body mass index (BMI) at or above the 85th percentile, but below the 95th percentile. Obesity is defined as having a BMI above the 95th percentile, compared to other children of the same age and sex (Centers for Disease Control and Prevention [CDC], 2016).

Studies have shown childhood obesity is accompanied by many long and short-term adverse health concerns. Children who are either overweight or obese have an increased risk of developing several metabolic disturbances, including hypertension, dyslipidemia (elevated blood lipid levels) and insulin resistance (Simmonds, Llewellyn, Owen, & Woolacott, 2015). Diseases such as type 2 diabetes and severe cardiovascular dysfunctions, which were originally viewed as primarily adult illnesses, are now being diagnosed in children and adolescents more frequently (Biro & Wien, 2010). The development of these conditions at such a young age can eventually lead to heart disease, kidney failure, and bone and joint dysfunction (Sahoo et al., 2015).

Children who are either overweight or obese may also endure psychosocial consequences attributed to their weight status. The CDC states that obese children are more likely to be bullied and teased, suffer from social isolation, depression, lower self-esteem, and an overall lower quality of life (CDC, 2017). Recent studies have found that being overweight or obese may also affect health-related quality of life (HRQOL) (Hu, 2008). The World Health Organization (WHO) defines HRQOL as an individual's quality of life associated with their physical, mental, and social well-being. Suffering from a chronic health condition such as obesity, may cause drastic limitations in body functioning that may contribute to lower HRQOL (Megari, 2013). A study reviewed

28 cross-sectional and population-based studies that focused on comparing HRQOL in children and adolescents who were categorized as obese with peers of normal weight (Tsiros et al., 2009). Findings showed that children and adolescents with obesity have reduced overall HRQOL compared to their peers.

In efforts to prevent obesity, or develop interventions to help youth struggling with weight management, it is important to identify factors that may contribute to overweight status. Many studies have indicated that poor nutrition and lack of physical activity are major contributing factors. The AHA recommends that children should have a diet "low in saturated fat, trans fat, cholesterol, salt, and added sugars" to support normal growth and development. Beginning at age 2, children should get most of their calories from grain products, fruits, vegetables, low-fat dairy products, and lean proteins (AHA, 2016).

A major nutritional concern among children today, which greatly contributes to the high caloric intake of children and adolescents, is added sugars. Sugars can be either naturally occurring or added. Naturally occurring sugars are found in foods such as fruit and milk, where added sugars are sugars and syrups added into foods during processing, or poured or cooked into food at the table (AHA, 2017). These foods contain very little nutrients and are calorie dense. The main sources of added sugar in the United States are soft drinks, processed candy, baked goods, fruit drinks, and other forms of sweets (U.S. Department of Health and Human Services [USDHHS, n.d.]). Consuming large portions of these types of foods may contribute to weight gain and other subsequent health concerns.

Lack of physical activity is another contributing factor to overweight and obesity in youth. According to the American College of Sports Medicine (ACSM, 2018), adults should participate in at least thirty minutes of moderate intensity physical activity, three to five days a week. Children should participate in 60 minutes of moderate to vigorous physical activity daily that is fun and age appropriate (Kisner, Lynn, & Borstad, 2017). Unfortunately, most adults and children do not meet these guidelines. It has been reported that more than 80% of all adults and adolescents do not meet the necessary recommendations for physical activity, and about 80 million children ages 6 and older are physically inactive (USDHHS, 2018).

Studies of exercise adherence have identified a variety of factors that play a role in physical activity participation. Motivation to engage in physical activity (or other behaviors) can be conceptualized as falling along a continuum from intrinsic to extrinsic (Ryan, Frederick, Lepes, Rubio, & Sheldon, 1997). Intrinsic motivation is focused on personal satisfaction and enjoyment, whereas extrinsic motivation is focused on receiving satisfaction from rewards or the outcome of the events. Richard and colleagues (2009) stated that intrinsic motivation to participate in physical activity depends upon the individual's perception of their skills and capacity to exercise correctly (Richard, Williams, Patrick, & Deci, 2009). The initiation and continuation of physical activity stems from this perception or self- acknowledgment. However, most individuals maintain their physical activity routine not because they are truly enjoying or interested in the activities, but because they have something to gain or prove to others, which is a form of extrinsic motivation. Two factors shown to increase intrinsic motivation and participation in physical activity include social support, and the presence of music.

B. *Social Support*

Many studies have been conducted to evaluate the effect of social support on motivation, exercise adherence, and performance in children and adolescents. Social support is defined as any type of support that people

receive from others. There are two major classifications of social support: emotional (feelings of love and care) and instrumental (tangible) support (MacArthur SES & Health Network | Research, 2008). Li and colleagues (2014) examined the impact of peer and parental influences on exercise adherence among youth aged 15-17 years. Over 2400 students from 137 different high schools participated in the NEXT Generation Health Study. The students were asked questions regarding social support and physical activity. The researchers reported that, "Social context and social support are important influences on motivation, and research indicates that social support from friends and family members is associated with higher levels of physical activity".

Salvy and colleagues (2009) noted that exercising with a peer increased children's motivation to engage in physical activity. Participants in the study were 12-14 year-old children, some who were overweight (BMI > 85th percentile) and others who were not overweight (BMI between 15th and 85th percentile). Variables measured included motivation to engage in physical activity and actual physical activity completed in a laboratory setting. The results indicated that the presence of a friend increased the children's motivation to participate in physical activity, and amount of activity for children who were both overweight and non-overweight.

The impact of social support on physical activity has also been examined with respect to relationships. For example, De le Haye, Robins, Mohr and Wilson (2011), explored the impact of school friendships on physical activity in 378 eighth grade students. The results showed that students gravitated towards other individuals who performed similar levels and intensities of physical activity, and suggested that increases in physical activity adherence were likely due to the support, modeling, and the socialization processes that are involved with group activities and friend behaviors during physical activity.

The value of friends relative to physical activity was also highlighted in a large-scale study that examined 310, 11-13 year olds from 15 different schools in the US. The goal of the study was to determine the relationship between social networks and friend and family relationships on physical activity and sedentary behaviors. The results support the conclusion that (a) the way a child perceives his or her friend's or peer's level of physical activity plays a major role in their amount of physical activity and sedentary time (b) friendship characteristics correspond with the amount of physical activity during late childhood or early adolescence, and (c) these relationships differ by gender. If a child surrounds herself with peers that are more active or is consistently in an environment where she and her peers are allowed to perform physical activity together, performance and enjoyment of the activity is promoted (Benham, 2014).

C. *Music*

A second practical variable that may influence intrinsic motivation to exercise is music (Edworthy & Waring, 2006). Music is present in most individuals' lives daily, and it can help people express themselves and relieve stress. In addition, music therapy is an effective technique and tool used in rehabilitation settings (Wakim, Smith, & Guinn, 2010). Can music be incorporated into routine physical activity to increase exercise motivation, perceptions of enjoyment, and activity levels in children? Benham (2014) studied the potential effect of music on 305 male and female seventh to ninth grade students enrolled in physical education classes. Students were taught lessons in basketball and volleyball with music and without music. The music selected for the study consisted of popular, upbeat, fast tempo (120-160 BPM) songs suggested by polling junior high students. Four basketball lessons were taught, with music for two lessons and without for two other lessons. The second round of data collection for volleyball took place the following week using the same design as basketball. Pedometer

data, step counts, time in activity, and level of enjoyment were recorded at the end of each lesson. The data showed that "music elicits a natural movement response… [causing] improved motor performance, increased aerobic endurance, an enhanced physical activity experience, and a positive environment to learn and practice skill development" (Benham, 2014). In addition, choosing a style of music that is preferred by the exerciser may also improve focus and act as a distractor from the discomforts associated with physical activity.

In an additional study, Stork and colleagues (2015) found that the presence of self-selected music enhances performance and enjoyment during sprint interval training (SIT) in adults. This study consisted of 22 moderately active young adults (22yrs old ± 4 years) that each participated in a short session of SIT under two conditions (with music and without music). During each condition peak and mean power output, RPE (rate of perceived exertion), motivation, and enjoyment were measured. The results displayed that peak and mean power and enjoyment levels were significantly higher when music was present during the training period. This supports the claim that listening to music while performing specific exercises can facilitate participation, adherence, and overall enjoyment.

Many studies have been conducted that support the positive effects that social support and music have on motivation and physical activity adherence, but additional work needs to be done to adequately explore the true benefits to exercise of these two factors specifically in children and adolescents that are prone to becoming overweight or obese. Therefore, the purpose of this project was to examine the potential effects of social support and music on exercise adherence and enjoyment among children.

II. METHODS

Participants in the study were fifteen students between the ages of 6 and 13 participating in a university-based after school physical activity program. Participants included 9 females with a BMI range of 15.4 – 31.6, and 6 males with a BMI range of 16.3 – 34.2. All attended a nearby elementary or middle school and participated in an after school program twice a week. Before beginning, written consent was obtained from the childrens' parents and verbal assent was received from all the participants under the age of 10. Those participants who were 10 years of age or older provided written consent. The experimental procedure and all related materials were approved by the Institutional Review Boards of the institutions involved in the study.

A. *Exercises and Equipment*

As part of the normal exercise routine, students participated in four different assessment (target) exercises: wall sits, planks, body weight squats, and bunny hops. Wall sits were performed placing the back against a wall with knees bent at a 90-degree angle. The participant's shoulders, upper back and back of their head remained against the wall during the entire exercise. Forearm planks are the most common type of planks performed. For this exercise, the individual placed their forearms on the ground with their elbows aligned below their shoulders, and arms parallel to their body at about shoulder-width distance. The individual could either put their palms flat on the ground or make a fist with their hands, whichever was more comfortable. Bodyweight squats were performed standing with their feet shoulder width apart with their hands behind either the head or lifted in front of the chest. To begin the squat the participant flexed their knees and hips, sitting back with their hips until they reached at least a 90-degree angle in their knees. Then they quickly reversed this movement and returned to the standing position. Lastly, bunny hops were performed by simply keeping their feet together and continuously ju-

-mping off both feet as high and as quickly as possible.

Twice a week for each week of the study, students engaged in one of the target exercises. The amount of time participants performed the exercise correctly, their heart rate, and their level of enjoyment was recorded. The level of enjoyment was measured using a scale ranging from 1 (Did Not Enjoy) to 5 (Enjoyed) that referenced sad-to-happy faces. The children completed the scale immediately after finishing each exercise.

Data was collected during and immediately following the four different exercises on data sheets during each session. Each child's heart rate was recorded using Polar GoFit Heart rate monitors worn by each child and the length of time they completed each exercise was measured using a stopwatch. Enjoyment was measured using the scale above presented immediately after completing each exercise. At the end of each week, participants completed a separate scale to rate their enjoyment level for working out to each different type of music.

B. *Experiment 1*

Does performing an exercise alone or with a small group affect the enjoyment level and heart rate of children participating in specific physical activities?

Participants cycled through each exercise twice throughout the semester to see if their perception and enjoyment of exercise changed as their physical activity level increased throughout the semester in the program. During the first cycle, the children performed the exercise by themselves with no assistance or external motivation every Tuesday. Then, on Thursdays, they performed the same exercise within their assigned groups and they were allowed to talk and motivate each other. During the second four-week period (cycle) in the lab, the children performed the group assessments on Tuesdays and the individual assessments on Thursdays.

C. *Experiment 2*

Are enjoyment and exercise participation affected by music?

To measure the effect that different forms of music had on performance and enjoyment, four different styles of music were played in the lab including classical, classic rock, folk/zydeco, and kidz bop (student's choice). Every Thursday, at the end of the last session, participants completed the enjoyment scale to determine if the music had any effect on their experience for that week.

Procedure Checklist.

Step 1: Make sure every participant has his or her Polar Heart Rate monitors on and that it is properly displaying the child's heart rate.

Step 2: Move participants either individually or in their designated small groups to their assessment exercise.

Step 3: Explain and demonstrate the exercise designated for the week.

Step 4: Set-up a timer for each child performing the exercise and make sure that each adult is aware of which child they are monitoring.

Step 5: Begin the timer and record the number of seconds the child correctly performs the exercise. (Squats → count the number of squats they complete correctly and continuously).

Step 6: As soon as the child is finished performing the exercise have them fill out the enjoyment scale by circli-

-ng the number that expresses how much they enjoyed the exercise.

Step 7: Record each child's heart rate displayed on the board from the polar heart rate monitors, response from the scale, and the time (or number of squats) they were able to perform the exercise on the data sheet created for each exercise and posted in the lab.

Repeat this procedure for each exercise, following the schedule. Keep the children in an isolated area with as few distractions as possible while they are performing the assessments and try to keep them focused and engaged in the activity for the entire assessment period.

III. RESULTS

Paired-Samples t-tests were used to identify differences between 35 pairs of variables. Variables included pre and post program achievements such as number of squats, length of time of wall sits, planks, and bunny hops as well as heart rate, and enjoyment of activities between participants who completed the activities by themselves and when they completed the activities with a partner. In addition, the level of enjoyment while performing each assessment to different genres of music was evaluated.

A. *Exercising Individually vs. In Small Groups*

Comparisons of results when exercising individually versus in a small group yielded several differences. During the initial assessment period, participants completed significantly more bunny hops when performing them with a partner than when completing them by themselves ($t = 3.45$, $p = .007$), and participants had higher heart rates when completing the activity with a partner ($t = 2.92$, $p = .014$). Participants also had a significantly higher heart rate while completing wall sits with a partner than when they completed the exercise by themselves ($t = 2.25$, $p = .043$). Heart rates were also higher while completing planks, but the difference was not significant ($t – 2.08$, $p = .06$).

Significant differences were also shown during the reassessment period. Participants had significantly higher heart rates when completing wall wits with a partner ($t = 2.16$, $p = .05$) than when completing them by themselves. Participants were also able to complete a higher number of squats ($t = 2.32$, $p = .05$) when performing them with a partner.

Differences in the level of enjoyment while performing each task were found between individual and partner exercise during the reassessment period. Participants had a significantly higher level of enjoyment ($t = 3.00$, $p = .02$) while performing squats with a partner than when completing them by themselves.

Comparisons of enjoyment, heart rate, and time were completed between the initial and re-assessment periods, which resulted in several significant differences. Participants had significantly higher heart rates when performing bunny hops with a partner ($t = 3.45$, $p = .007$) than when completing them by themselves during the reassessment period compared to the initial assessment period. During the planks reassessment period, participants had a higher level of enjoyment while completing them with a partner rather than by themselves than during the initial assessment period.

In addition, differences in the level of enjoyment while exercising to specific genres of music occurred throughout the semester. There was a higher majority of high-level enjoyment scores for weeks 4, 7, and 8 compared to weeks 1, 5, and 6. This showed that the presence of music elicits a higher level of enjoyment if the

music being played is fast paced or selected by the exerciser compared to slower genres of music in which the exerciser is unfamiliar.

IV. CONCLUSION

A. *Conclusion*

Childhood obesity rates are steadily growing, and continue to be a major health concern for scientists and parents alike (Kelsey et al., 2014). Studies continue to be conducted to identify, implement, and evaluate effective programs and interventions to increase physical activity among all children, especially those who struggle with weight management. The strategies investigated in the current project looked at social support and presence of varying genres of music.

The purpose of this study was to determine if the presence of social support and music while exercising affects exercise enjoyment and adherence in children ages 6 to 13. The results collected from this experiment were consistent with previous findings and showed that exercise adherence and performance were improved with the presence of social support and music. According to Li and colleagues (2014), social support from friends increases motivation and physical activity levels for children within each weight category. It can be seen in the results that heart rate and the time correctly performing an exercise increases when social support is present. In addition, if children are allowed to choose the music that is played while they are exercising, exercise enjoyment and performance increases. This is consistent with findings from Stork and colleagues (2015) which state that listening to fast tempo, self-selected music can promote participation and overall enjoyment while performing specific physical activities.

B. *Limitations*

Limitations of the study that may have caused errors include sample size and the interest, willingness, absenteeism, and cognitive reasoning and functioning of each participant. It is difficult to generalize or transfer these findings to children within this age group as a whole. Interest and willingness of the children to participate in the proper manner and to focus their full attention to the task may have also played a huge factor. Lastly, the diverse and wide age range of all of the participants represented many different levels of maturity, reasoning, and cognitive ability, which may have caused miscommunication between the participants and experimenters.

Though there were some limitations, the information gained from this study can be used to further evaluate the effect of music and social support to improve exercise conditions for children of all ages and weight categories. These simple tasks and tests may be added to any physical activity course to evaluate the effects of these two factors over a large population of children with a greater diversity of participants. With additional results, large-scale interventions and programs could be developed and implemented to improve the perception of exercise for children to help increase the amount of physical activity children and adolescents participate in each day.

REFERENCES

[1] American College of Sports Medicine, (2018). *ACSM's Guidelines for Exercise Testing and Prescription*. Retrieved August 26, 2020, from https: //www.acsm.org/read-research/books/acsms-guidelines-for-exercise-testing-and-prescription.
[2] American Heart Association. (2016, July 5). *Overweight in Children*. Retrieved October 24, 2017, from http://www.heart.org/ HEARTORG/ HealthyLiving/HealthyKids/ChildhoodObesity/Overweight-in-Children_UCM_304054_Article.jsp#.WfZH72hSxPZ
[3] American Heart Association. (2016, July 22). *Dietary recommendations for healthy children*. Retrieved October 23, 2017, from http:/

www.heart.org/HEARTORG/HealthyLiving/Dietary-Recommendations-for-Healthy-Children_UCM_303886_Article.jsp#. WfYw82hSxPZ
[4] American Heart Association. (2017, February 1). *Added Sugars*. Retrieved October 23, 2017, from http://www.heart.org/HEARTORG/HealthyLiving/HealthyEating/Nutrition/Added-Sugars_UCM_305858_Article.jsp#.Wfc6xmhSx PY
[5] Benham, L.K. (2014). *The effects of music on physical activity rates of junior high physical education students (Unpublished Masters dissertation)*. Available at http://scholarsarchive.byu.edu.
[6] Biro, F.M., & Wien, M. (2010). Childhood obesity and adult morbidities. *The American Journal of Clinical Nutrition*, *91*(5), 1499S-1505S. doi:10.3945/ajcn.2010.28701B
[7] Centers for Disease Control and Prevention. (2016, October 20). *Defining childhood obesity*. Retrieved October 25, 2017, from https://www.cdc.gov/obesity/childhood/defining.html
[8] Centers for Disease Control and Prevention. (2017, September 13). *Tips for parents: Ideas to help children maintain a healthy weight*. Retrieved October 24, 2017, from https://www.cdc.gov/healthyweight/children/index.html
[9] De la Haye, K., Robins, G., Mohr, P., & Wilson, C. (2011). How physical activity shapes, and is shaped by, adolescent friendships. *Social Science & Medicine*, *73*(5), 719-728. doi:10.1016/j.socscimed.2011.06.023
[10] *Dietary guidelines: Choose sensibly*. (n.d.). Retrieved October 30, 2017, from https://health.gov/dietaryguidelines/dga2000/document/choose.htm
[11] Edworthy, J., & Waring, H. (2006). The effects of music tempo and loudness level on treadmill exercise. *Ergonomics*, *49*(15), 1597-1610. doi:10.1080/00140130600899104
[12] Hu, F. B. (2008). Obesity and Health-Related Quality of Life. In *Obesity Epidemiology* (pp. 234-256).
[13] Kelsey, M. M., Zaepfel, A., Bjornstad, P., & Nadeau, K. J. (2014). Age-Related consequences of childhood obesity. Gerontology, 60(3), 222-228. doi:10.1159/000356023
[14] Kisner, C., Lynn, A., & Borstad, J. (2017). Prevention health and wellness. *Therapeutic Exercise: Foundations and Techniques* (7th ed., p. 51). Philadelphia, PA: F.A. Davis Company.
[15] Li, K., Iannotti, R.J., Haynie, D.L., Perlus, J.G., & Simons-Morton, B.G. (2014). Motivation and planning as mediators of the relation between social support and physical activity among U.S. adolescents: A nationally representative study. *International Journal of Behavioral Nutrition and Physical Activity*, *11*(1), 42. doi:10.1186/1479-5868-11-42.
[16] MacArthur SES & Health Network | Research. (2008). Retrieved from http://www.macses.ucsf.edu/research/psychosocial/socsupp.php
[17] Megari, K. (2013). Quality of Life in Chronic Disease Patients. *Health Psychology Research*, *1*(3), e27. http://doi.org/10.4081/hpr.2013.e27
[18] Ogden, C.L., Carroll, M.D., Lawman, H.G., Fryar, C.D., Kruszon-Moran, D., Kit, B.K., & Flegal, K.M. (2016). Trends in Obesity Prevalence among Children and Adolescents in the United States, 1988-1994 through 2013-2014. *Jama*, *315(21)*, 2292. doi:10.1001/jama.2016.6361
[19] Richard, R.M., Williams, G.C., Patrick, H., & Deci, E.L. (2009). Self-determination theory and physical activity: The dynamics of motivation in development and wellness. *Hellenic Journal of Psychology*, *6*, 107-124.
[20] Ryan, R.M., Frederick, C.M., Lepes, D., Rubio, N., & Sheldon, K.M. (1997). Intrinsic motivation and exercise adherence. *International Journal of Sport Psychology*, *28*, 335-354.
[21] Sahoo, K., Sahoo, B., Choudhury, A.K., Sofi, N.Y., Kumar, R., & Bhadoria, A.S. (2015). Childhood obesity: causes and consequences. *Journal of Family Medicine and Primary Care*, *4*(2), 187-192. doi: 10.4103/2249-4863.154628
[22] Salvy, S.J., Roemmich, J.N., Bowker, J.C., Romero, N.D., Stadler, P.J., & Epstein, L.H. (2009). Effect of peers and friends on youth physical activity and motivation to be physically active. *Journal of Pediatric Psychology*, *34*, 217-225. doi:10.1093/jpepsy/jsn071
[23] Simmonds, M., Llewellyn, A., Owen, C., & Woolacott, N. (2015). Predicting adult obesity from childhood obesity: A systematic review and meta-analysis. *Obesity reviews*. 17(2), 95-107. doi:10.1111/obr.12334
[24] Stork, M.J., Kwan, M.Y., Gibala, M.J., & Martin Ginis, K.A. (2015). Music Enhances Performance and Perceived Enjoyment of Sprint Interval Exercise. *Medicine & Science in Sports & Exercise*, *47*(5), 1052-1060. doi:10.1249/mss.0000000000000494
[25] Tsiros, M.D., Olds, T., Buckley, J.D., Grimshaw, P., Brennan, L., Walkley, J., Hills, A.P., Howe, P.R.C., Coates, A. (2009). Health-related quality of life in obese children and adolescents. *International Journal of Obesity*. 33(4), 387-400. doi:10.1038/ijo.2009.42
[26] Wakim, J.H., Smith, S., & Guinn, C. (2010). The efficacy of music therapy. *Journal of PeriAnesthesia Nursing*, *25*(4), 226-232. doi:10.1016/j.jopan.2010.05.009
[27] U.S. Department of Health and Human Services. *Healthy People 2020.* Available at: http://www.healthypeople.gov/2020/default.aspx.

AUTHOR'S PROFILE

First Author
Callie Lambert, Southeastern Louisiana University, Hammond, LA, USA.

Second Author
Holly Kihm is a Professor in Health and Human Sciences at Southeastern Louisiana University. Her research interests are psychosocial issues related to child and adolescent obesity.

Third Author
Edward Hebert is a Professor in Kinesiology at Southeastern Louisiana University. His research focus is on motor skill acquisition and enhancing sport/movement performance by applying principles from motor learning and sport/exercise psychology. However, his educational and experiential background in Kinesiology is varied and includes teaching, coaching, and working in fitness.

Fourth Author
Heidi Kulkin is an Associate Professor in Social Work. Her research interests include psychosocial impacts of chronic illness.

Fifth Author
Ryan Green is an Assistant Professor in Athletic Training. His research interests include running technique, fitness and well-being.