

RESEARCH ARTICLE

Head Start Families Thoughts and Beliefs about Health, Nutrition, and Physical Activity

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In-depth interviews were conducted with a subset of Head Start families participating in an intervention comparison research study in a southwestern state. Families were asked to share thoughts and beliefs about eating and physical activity habits. Questions were asked in relation to consumption of healthy snacks, consumption of fruits and vegetables, influences on purchasing and eating habits, eating out patterns, physical activity, and perceptions of what it means to be healthy. Both intervention and comparison families felt it was essential to consume fresh fruits and vegetables. Economic reasons were cited by respondents as the main reason for not consuming fruits, vegetables, and healthy snacks regularly. While families from both the intervention and the control groups noted that their preschooler influenced their food purchases (about one-fourth of parents were *always* influenced), children from the intervention group began requesting healthy foods. Families stated engaging in daily physical activity was important; however, barriers such as health restrictions, work schedules, weather, and personal preferences affected levels of physical activity. Information from this study is guiding improvements to a preschool program targeting childhood obesity.

Keywords: health, nutrition, physical activity, eating, preschooler, Head Start

A child's eating and physical activity habits are influenced by their family, caregivers, environment, and experiences (Cooke, 2007; Lanigan, 2010; Roblin, 2007). Parents and other caregivers (such as preschool teachers) usually determine the availability and accessibility of foods served to young children (Birch & Anzman, 2010). Caregivers model attitudes and behaviors about feeding, eating, and physical activity practices (Larson & Story, 2009). Children's eating behaviors also can be influenced by: parental food preferences, family feeding practices, children's food exposure, role modeling, media exposure, and parenting styles

(Campbell & Crawford, 2001; Larson & Story, 2009). One of the strongest predictors of a child's fruit and vegetable consumption is parental consumption (Cooke, 2004).

Head Start parents with an authoritative parenting feeding style (encourages child to develop independence and self-regulation, but also sets boundaries) had children that consumed more vegetables than parents with an authoritarian feeding style (strict rules, children are expected to obey) (Patrick, Nicklas, Hughes, & Morales, 2005). In another study, child control and parental food preferences were perceived as significant barriers to appropriate feeding practices by Head Start parents (Hoerr, Utech & Ruth, 2005). If parents disliked certain foods they were usually not offered to their child (Hoerr et al., 2005).

Other factors influencing eating habits include economic situation, culture, and environment (Larson & Story, 2009; Larson, Ward, Neelson, & Story, 2011). Lower income households have tended to purchase foods lower in nutritional quality because healthier foods were more expensive or not as readily available (Kaufman et al., 2000). As the food cost per serving increased, the availability of the healthy food in the home decreased (Ard et al., 2007). The Economic Research Service determined that a ten percent discount on fruits and vegetables at retail stores would promote increased purchasing and consumption of these foods by low-income families (Dong & Lin, 2009). Additionally, the physical availability of food products and the types of retail stores (e.g., supermarkets, grocery stores, and convenience stores) have been shown to impact food purchasing (Laraia, Siega-Riz, Kaufman, & Jones, 2004). Families with better access to supermarkets had healthier diets than families with limited access (Laraia et al., 2004).

A positive correlation was found between physical activity levels of preschoolers and activity levels of their parents (Ruiz, Gesell, Buchowski, Lambert, & Barkin, 2011). Children had higher levels of physical activity if their parents were more active (Ruiz et al., 2011). However, young children's physical activity levels can be inhibited by neighborhood safety, weather, and caregiver's lack of time, lack of energy or level of physical competence (Dwyer, Needham, Simpson, & Heeney, 2008; Hughes, Gooze, Finkelstein, & Whitaker, 2010).

The preschool years are a prime time for children to learn healthy eating habits and basic fundamental gross motor movement skills. Unhealthy eating habits and lack of physical activity can play a role in future health concerns such as obesity (Roblin, 2007). Therefore, educational efforts targeting young children and their families should focus on the development of healthy eating and physical activity habits.

To promote the early development of healthy habits, the *All 4 Kids*[®]: Healthy, Happy, Active, Fit program was developed. *All 4 Kids*[®] targets overweight prevention in children ages 3 to 5 years old, by involving the preschooler, their primary caregivers, and preschool teachers in an educational program. The main objectives of the *All 4 Kids*[®] program are to improve the physical movement skills of preschoolers; promote the consumption of healthy snacks (e.g., fruits and vegetables), and teach children they can be active and eat healthy at any size or shape.

All 4 Kids[®] uses an obesogenic ecological model (Figure 1) as its theoretical framework. The conceptual framework is based on Urie Bronfenbrenner's ecological systems theory which looks at the person, their environment, and the interactions between the two systems (Bronfenbrenner, 1979). An ecological model assumes that a child is influenced by family and community environments. The immediate environment (family) includes the child's parents, other primary caregivers, and teachers. The community environment is an obesogenic society in which overeating and sedentary behaviors are supported. Therefore, assuming the child is influenced by family and community environments, education efforts must focus on direct

teaching of preschoolers and the engagement of significant others (e.g., parents, caregivers, preschool teachers) through direct and indirect teaching (e.g., take-home activities, family and teacher newsletters). These educational efforts should be designed to influence the healthy eating and physical activity knowledge and behaviors of preschoolers, their families, preschool teachers, and the community environment.



Figure 1. The Obesogenic Ecological Model

Three major themes are addressed in the 24 lessons of the *All 4 Kids*[®] program: Be Active, Eat Smart, and Live Healthy at Any Size. Each thematic unit contains eight 30-minute lessons, delivered by trained teachers three times weekly. Classroom components include movement skill practice and dancing, along with interactive and purposeful nutrition and health messaging. The program concepts are taught through stories, games, food tasting, and other activities. In addition to the classroom components, parents are invited to attend three family events and children take home activities to share with their families. For the first unit, Be Active, preschoolers are taught specific physical movement skills and dances based on state Pre-Kindergarten Standards. In the second unit, Eat Smart, the curriculum focuses on teaching preschoolers how to select healthy foods (especially fruits and vegetables) to eat at snack times as this may be an eating occasion when children can request specific foods. Preschoolers learn that healthy foods “help keep my heart, my muscles, and my bones strong”; whereas, unhealthy foods “do not help keep my heart, my muscles, and my bones strong.” The third unit, Live Healthy at Any Size, teaches children that they are unique and everyone can be active and eat healthy (regardless of body size or shape). Quantitative comparison of preschoolers' movement skill competency and changes in understanding of and preference for healthy foods were reported elsewhere (Gabor, V. et al., 2012). Positive statistical significance was detected between treatment and comparison groups in these measures.

PURPOSE

The purpose of this study was to assess the thoughts and beliefs of Head Start families in relationship to health, nutrition, and physical activity between treatment and comparison groups. The researchers asked families to share their perceptions of what it meant to be healthy. Specific

questions were posed to gain information about family habits related to eating and physical activity in both groups.

METHOD

Study Design

In-depth interviews were conducted with a subset of Head Start families participating in an intervention comparison research study (during the post evaluation phase) in a southwestern state in spring and summer 2010. The study included 12 Head Start sites (six intervention sites that received the *All 4 Kids*[®] program and six comparison sites that did not). Ten percent of participants (n=63) involved in the post data collection stage of the larger study (n=629) were randomly selected for interviews (approximately five per Head Start site). The study was approved by the university's Institutional Review Board.

A mixed methods protocol employed a structured format designed to elicit quantitative and qualitative responses. Detailed information related to food consumption and physical activity choices was obtained. Differences between families in the intervention and comparison group were determined with a descriptive and comparative design using content analysis of individual questions.

Interviews

Thirty to forty minute interviews were conducted with study participants. Trained researchers facilitated all interviews in the preferred language of either English or Spanish. Participants received a \$10 grocery gift card upon completion. Interview questions were developed (See Appendix) to gain understanding of families' views about nutrition, physical activity, and health. Participants were queried about consumption of healthy snacks, consumption of fruits and vegetables, influences on purchasing and eating habits, eating out patterns, physical activity, and perceptions of what it means to be healthy. Interviews were recorded and transcribed verbatim. Snacks were classified into healthy or unhealthy categories using the following definition for healthy snacks: Small portions of foods that contain vitamins and minerals, high in nutrients, and low in fat and sugar.

RESULTS

Sample Description

Sixty families (30 intervention, 30 comparison) participated. Three families in the comparison group had multiple children. As responses differed for each child they were counted separately for a total of 33 comparison interviews.

Consumption of Healthy Snacks

Respondent families were asked what types of snacks they and their children consumed. Parents in the intervention group had a more comprehensive understanding of the concept of healthy snacks. Eighty-four percent of the intervention families and fifty-eight percent of the comparison families named at least three healthy snacks (Table 1). Half of intervention families indicated that healthy snacks were eaten by themselves and their children. In contrast, families in the comparison group were less likely to consume healthy snacks. Two families stated that eating snacks between meals was “not common” in their culture

TABLE 1
Responses from Families

	Intervention n=30	Comparison n=33
What type of snacks do you and your children eat?		
Healthy: caregivers	50%	27%
Healthy: children	50%	36%
Combination of healthy and unhealthy: caregivers	33%	18%
Combination of healthy and unhealthy: children	33%	21%
Types of snacks		
Fruits and vegetables (e.g., bananas, melon, broccoli)	83%	73%
Grain products (e.g., crackers, bread, cereal bars)	50%	50%
Milk products (e.g., yogurt, cheese, milk)	50%	36%
Meats	17%	9%
Reasons for eating healthy snacks		
Health	47%	36%
Reducing and eliminating sugars and fats in diet	13%	15%
Growth and development	17%	18%
Energy	17%	18%
Maintaining healthy weight	17%	3%
Vitamins, minerals, nutrients	17%	9%
Acquire a taste for new foods/healthy eating	10%	9%
Reasons for eating fruits and vegetables		
Stay healthy	80%	54%
Vitamins and minerals	36%	30%
Preschooler requests to purchase foods		
Caregiver influenced by preschooler	53%	54%
“Always” purchase preschooler request	24%	21%
“Never” purchase preschooler request	13%	21%
Reasons to be physically active		
Maintain health	50%	54%
Increase family time	13%	0%
Barriers for myself	6%	50%
Barriers for my children	6%	22%

Almost half (47%) of intervention families and one-third (33%) of comparison families indicated they had introduced new snacks to their preschooler in the past 30 days. Participation in the *All 4 Kids*® program appeared to have influenced intervention families' introduction of new snacks, as about one-fourth (27%) noted that they had purchased and served foods that the *All 4 Kids*® program had introduced to their preschooler (e.g., kiwi, jicama). There were no dominant trends in the comparison group as to types of new snacks introduced.

Table 1 describes the main reasons given by intervention and comparison families on why they perceived eating healthy snacks as important. Overall, intervention families had a more diverse set of reasons and were likely to offer a combination of reasons that represented how healthy snacks were part of an overall healthy lifestyle:

“For one, as he gets older he’ll continue to eat those [healthy snacks]. If you get accustomed to eating ding-dongs every time rather than here or there it will add up. Then you can’t run and play with your kids because you’re out of breath. I try to make a healthy dinner every night. We have a vegetable every night and in summer, fresh fruit, cantaloupe, honeydew, watermelon. Kids love the melons....” (Intervention Family)

Barriers to Eating Healthy Snacks

Families were asked to share any barriers to offering their preschooler healthy snacks. Similar barriers were given by participants in both groups. Barriers cited included money, likes or dislikes, dietary restrictions, and unhealthy snacking by parents. Some parents did not perceive any barriers, but conceded to the child's likes and dislikes or lack of willingness to experiment with new foods. The following are examples of quotes from study participants about barriers to eating healthy snacks:

“The money [is a barrier]. Sometimes vegetables and fruits are more expensive than meat. I look for specials. If coupons are available and things are on special, I look for food that is healthy and buy in bulk.” (Intervention Family)

“No [barriers] other than his mood. Whether he wants or is willing to try something new.” (Intervention Family)

“Taste [is a barrier]. I try to include things like kiwi or kale but he doesn’t like it. I asked a nutritionist about it and she told me to make him try it 20 times.” (Comparison Family)

Consumption of Fresh Fruits and Vegetables

Both intervention and comparison families felt it was important to consume fresh fruits and vegetables. Although there were differences in reasons cited between intervention and comparison families, the main reason mentioned was to stay healthy (Table 1). About one-third of both groups cited the importance of eating fruits and vegetables for nutrients such as vitamins

and minerals. One intervention family referenced *All 4 Kids*® as a reason for changing their eating habits and shifting toward increased consumption of fruits and vegetables:

“All 4 Kids® has helped our family to eat more healthy. To eat more fruits and vegetables.” (Intervention Family)

Another intervention family cited the importance of consuming fruits and vegetables to avoid eating other foods higher in calories. The majority of intervention and comparison families noted that they currently provided their preschooler with commonly eaten fruits (e.g., apples, oranges, bananas, melons) and vegetables (e.g., corn, peas, and carrots).

In this study, most of the respondent families fed their preschoolers more fruits than vegetables, and offered a wide variety of options. Intervention families mentioned that they frequently offered grapes, kiwi, and mango, whereas comparison families offered strawberries, peaches, and plums. Both groups mentioned eating broccoli, cauliflower, and a variety of squashes and other less typical vegetables (kale, greens, cabbage, celery, and cucumbers). Families sometimes indicated that they served frozen mixed vegetables (peas, carrots, and corn) as well as raw vegetables with ranch dressing or some type of dip. Salad, tomatoes, and other greens were mentioned less frequently. Interestingly, neither group mentioned French fries or other types of potatoes.

Nearly two-thirds (63%) of intervention families and slightly more than half (52%) of comparison families indicated they had introduced new types of fruits or vegetables to their children. Of those who had introduced new fruits and vegetables, about one-third of intervention families (31%) and over half of comparison families (53%) noted that their children did not like them.

Barriers to Consumption of Fruits and Vegetables

Comparison families were two times more likely to indicate there were barriers to consuming fruits and vegetables than intervention families (18% versus 7%) and yet both sets of respondents lived in similar socio-economic conditions. One hundred percent of those indicating there were barriers cited economic reasons for not being able to consume fruits and vegetables regularly.

“Yes, the prices. Time. You don’t always get to eat healthy. It’s easy to just stop and get something to eat. Some places offer healthy choices, but we don’t buy those items.”
(Comparison Family)

By contrast, some intervention families indicated there were no barriers; however, they still indicated that economics played a factor, but positively. Two suggested that WIC (The Special Supplemental Program for Women, Infants, and Children) enabled them to buy fruits and vegetables and without WIC (after their children turned 5 years old) it would be harder to purchase fruits and vegetables. *“It’s easier to save money—more economical.”* (Intervention Family)

Influences on Purchasing and Eating Habits

Finances were mentioned as an influence on food purchases by both intervention and comparison families. The media was not as great an influence as might be expected on food purchases. When media was indicated as an influence, the reason given was primarily related to saving money. Special news ads or coupons were the main media source reported by intervention families, whereas television was the main source reported by comparison families. Five comparison families stated that they were influenced by the media to purchase fast foods. The dominant way media influenced food purchases in both groups was through the promotion of sales or specials for food items.

“I am influenced by good/healthy food. I also look for specials to save money.”
(Intervention family)

“We look through the newspaper and I try to find what is economical. We always buy milk, no matter what it costs.” (Comparison family)

Families were more likely to be influenced by their preschoolers’ requests for specific foods than by the media; however, some families did indicate that their preschoolers’ requests were influenced by what they saw or heard on television. The greatest influences on food purchases for about half of both groups were cost and nutritional value of the foods.

Intervention families (30%) were more likely to shop together for food purchases (either both parents or combination of family members, including children) than comparison families (21%). The majority of intervention and comparison families (Table 1) indicated they were influenced by their preschoolers’ requests when shopping. About one-fourth of the families from both groups indicated they “always” purchased items their preschooler requested. A similar amount of families indicated that they “never” bought what their preschoolers asked them to buy.

“Whether I’m grocery shopping myself (or which children are with me) and how whiny they are being influences my purchases. Usually I try to stick to a list, but if they are with me more of the junk variety gets into the cart.” (Intervention family)

Eating Out

There were no differences in the frequency of eating out between intervention or comparison families. Most families ate out about once a week. The analysis of where families reported eating out indicated that intervention families were slightly more likely to report eating at family restaurants (57%) than fast food establishments (50%). By contrast, two-thirds (66%) of comparison families stated they ate at fast food establishments and only about one-fifth (18%) ate at family restaurants. Intervention families tended to make healthier choices than comparison families in both their choice of eating establishments and the food items selected from the menu. Intervention families were twice as likely to report selecting healthy meal choices when they did eat out (66% versus 33%). Examples of healthy food choices given included: chicken, raw vegetables, rice, salad, fish, soup, apples, and pasta versus fried foods or burgers.

Physical Activity

Overwhelmingly, in both the intervention and comparison groups, respondents believed it was important for families and their preschoolers to be physically active. Although the main reasons given were to maintain health (Table 1), the intervention group cited other reasons. These reasons included the importance of increasing “family time” as an outcome of engaging in physical activity. Respondents were asked to share if they thought it was important for them to be physically active:

“Yes I do. I am not healthy. So it gives us one more thing to bond on. If it wasn’t for him, I would be worse off. Otherwise I would be at home doing nothing. He says, ‘let’s do something’, football, soccer, walks, go to the park, and I usually go with him. He keeps me active.” (Intervention family)

“It is very important. For me it is important that we do physical activity together. Especially since she wants to do everything I do. It’s very important.” (Intervention family)

Both groups felt it was important for their preschooler to engage in physical activity every day. Several families even mentioned the connection between physical activity and obesity prevention:

“Yes, it is pretty important because if not we become lazy. There are a lot of cases about obesity and I don’t think it is right for kids to sit around and see television and become obese. It is important for them to be outside and to interact with others.” (Intervention Family)

“I think it is important to be physical. It’s good for your body to move around. Trends in America indicate the obesity rate is not good. It’s important that you start at a young age.” (Comparison Family)

Over one-quarter of intervention families versus less than one-fifth of comparison families offered multiple reasons for the importance of engaging in physical activity. Among the reasons offered was avoidance of illness, not being sedentary or bored, and gaining personal benefits. *“It’s good to educate a child when they are small. As kids grow and are active in sports they don’t have time to think about other things: drugs, gangs, etc. I keep them active.”* (Intervention Family)

Caregivers from both groups reported that their preschoolers were physically active an average of six times per week. Intervention families reported that their preschoolers were active an average of about 20 to 25 minutes longer than comparison families. Over half of intervention caregivers and one-third of comparison caregivers reported that they had introduced new activities to their preschoolers during the past 30 to 60 days. New physical activities included the introduction of bicycles, scooters, skateboards, football, swimming, and skating.

When asked what it meant to be physically active, both groups demonstrated similar patterns of thinking. Ideas fell into one of three variations: physical activity (exercise, walking, going to the gym, traditional individual or group sports such as basketball or football); activities of daily living (cleaning the house, mowing the lawn); or a combination of both.

“Physical activity means to have fun, jump, play, and kick the ball.” (Intervention Family)

“To me it means getting up and moving around and using your muscles, instead of watching television. It means burning calories.” (Intervention Family)

Three of the comparison families did not offer any definition for physical activity whereas 100% of intervention families described their perceptions. Nearly two-thirds (63%) of the intervention families shared that they either walked as their physical activity, or often combined walking with other forms of physical activity such as playing, going to the park, or participating in traditional sports. Just under half (43%) indicated they were physically active while cleaning house, running errands, or doing other indoor tasks. Slightly more than one-third (37%) of the intervention families stated they played some type of sport or went to the gym. One parent provided a very creative example of how she and her preschooler actively played together:

“We have a carpet that has squares with Disney characters. We throw a coin and depending on where it lands, we do the exercise it specifies. My kids and I participate in the exercise. It's a game we play to be active.” (Intervention Family)

Barriers to Physical Activity

Intervention families reported fewer barriers to engaging in daily physical activity. Comparison caregivers were three times more likely than intervention families to report barriers for themselves and six times more likely to report barriers for their preschoolers in engaging in daily physical activity (Table 1). For both groups of families, the barriers related primarily to health restrictions or work schedules. However, additional barriers cited by comparison families included the weather, being lazy, and personal preferences around how to spend free time. One intervention family noted that there used to be barriers, but now they saw other ways of staying active.

“Not in this moment (barriers) because I am not working. I use to think that I needed to buy a membership to a gym. Not anymore.” (Intervention Family)

Perceptions of What it Means to Be Healthy

Families were asked to share what the word “healthy” meant. Families from both groups referred to different aspects of healthy eating and physical activity habits, although a few families also described long term benefits. A few comparison group participants mentioned the absence of sickness within their definition.

“Healthy means to me - we eat healthy, go out and play, not just sitting around or laying down all the time. Eating right and the right amount of exercise.” (Intervention Family)
“It means a lot. It means to be active and keep healthy so that we can live longer.” (Intervention Family)

“Healthy means being in good health. Not malnourished. Feeling good. No colds.”
(Comparison Family)

“Whatever you have to do to maintain health and not be sick.” (Comparison Family)

DISCUSSION

In this study, a majority of Head Start families reported striving toward healthy eating and physical activity habits. Moreover, many factors influenced where and what foods parents purchased for their households. Similar to other studies, participants noted cost as a major barrier in purchasing foods (Ard et al., 2007; Hughes et al., 2010; Kaufman et al., 2000). Yet, despite this barrier, intervention families in this study reported being willing and able to buy healthy foods at least some of the time. This may be due to families having a greater understanding of the relationship between health and eating habits. Intervention families also demonstrated greater experimentation and seemed to respond more positively about their preschooler eating new fruits and vegetables. A higher number of these parents reported eating and serving healthy snacks.

For some study participants in both groups, children’s requests for an unhealthy snack were fulfilled to avoid conflict, as a reward, or when parents were stressed. These findings support those of Hoerr et al. (2005) and Dwyer et al. (2008). However, while families from both groups noted preschoolers influenced their food purchases (about one-fourth were *always* influenced) several positive comments came from intervention families. One intervention family shared how the *All 4 Kids*[®] program had changed her daughter’s habits.

“Well my daughter used to like cookies. Now she has changed. Sometimes when we go buy food, she tells me that the program says that only “this” type of food is healthy. Her view has changed. She likes fruits. She now eats kiwis (which she used to not eat). The program is good. In our house we used to not eat fruit. But now, two days a week I fill the fruit basket. The family is starting to eat fruit.” (Intervention Family).

A young Latino family with four children shared that their entire family had made changes due to the support and information from the *All 4 Kids*[®] program. The parents stated they were purchasing more fruits and other healthy snacks due to requests from their preschooler. They felt the program had been the catalyst for reaffirming their resolve to take time to be with one another in healthy ways – being physically active, eating healthy meals, and spending time together. These examples demonstrate that a child’s request can change parental behaviors despite economic barriers. It appears that by teaching healthy habits to young children, programs such as Head Start can make inroads into influencing parents’ behaviors and attitudes about health.

In regard to physical activity, families in our study felt it was important to be physically active to maintain health and that it was a way to increase family time. Fewer intervention families in this study reported barriers than comparison families. Some of the barriers listed by both groups were work and weather. A few members of the intervention group stated that physical limitations and health issues were barriers, whereas members of the comparison group listed laziness, and other time commitments. These barriers differed from some of those identified by Hughes et al. (2010) (e.g., neighborhood safety, afraid their child would get hurt,

and did not think their child would enjoy being physically active). Potential differences between these study populations may be geographical or cultural.

Some limitations of this study should be noted. The data collection was limited to families at Head Start centers in one southwestern state gathered within a short time frame. Self-reported findings may not accurately reflect actual eating and physical activity habits. Future studies could track the actual eating and physical activity habits of participants in relation to self-report. Furthermore, greater exploration of topics related to health could lead to deeper understanding of strategies that offset barriers to healthy eating and physical activity.

IMPLICATIONS

One of the objectives of programs targeting obesity prevention is to help parents and other caregivers overcome barriers related to healthy eating and physical activity. Preschool teachers can promote healthy habits within the classroom (and at home) through modeling and educational efforts. Children benefit from hearing consistent messages about healthy habits (Lanigan, 2010) and as our study indicated, are able to communicate these to their parents, thereby influencing parents' behavior. Participation in the *All 4 Kids*[®] program appeared to help parents view challenges in a different light. Intervention families expressed fewer barriers to eating healthy foods and to participating in physical activity than comparison families. This is an important finding because eating healthy (which includes fruits and vegetables) as a family and being physically active are factors related to the prevention of obesity (Roblin, 2007). The engagement of parents and young children in exploring a variety of healthy foods and participating in physical activity seemed to help them gain a more positive concept of health. Therefore, efforts focused on health and wellness need to start early and continue throughout the life cycle. Educating parents, preschool teachers, and young children about healthy eating and physical activity habits is essential to the development of positive health outcomes.

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