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RESEARCH ARTICLE

PRESCHOOLERS' LEVEL OF ACTIVITY AND THEIR PARENTS' NUTRITION PRACTICES
REGARDING THEIR NUTRITION AT A CARIBBEAN GOVERNMENT OWNED PRESCHOOL

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ABSTRACT

Aim: The purpose of this study is to investigate the practices of parents of children (ages 2 to 5 years) at one of the government owned Pre-Schools in Antigua as it relates to the nutritional needs and appropriate level of activity.

Methods: The design is an exploratory descriptive study of the practices of parents of children in Antigua regarding their children's nutritional needs as well as their children's levels of activity. It used a combination of structured questionnaire to capture responses pertinent to the study from the parents, a semi-structured interview with the teachers of the school, and an observation of the children's activity while in school. The structures of these instruments were based on the food and nutrition guidelines for health of children and young people of the Ministry of Health (2012), of Antigua and Barbuda.

Result: Results indicate that 22 of the parents participated from the expected 30 representing 73.3% of the population. Of this, 56% report that their children are active (active and very active), and spending an average of 61.3 minutes in outdoors physical activities. Results also show that the children are packed an average of 3.5 items each day to come to school and drink an average of 4.4 ounces of fluid daily. These are at variance with the recommendations of the Ministry of Health.

Conclusion: The importance of early nutrition interventions and their relationship to cognitive ability in the short- and long-term is very clear (Kleinman, 2014). It is also clear that both nutrition and early stimulation programs work better when children benefit from them simultaneously (Kleinman, 2014). These results should concern any parent or teacher who has or interacts with preschool age children – ages 2 to 5 years old because they are the future, and if they are fed improper diets of inadequate amounts of fruits, vegetables and water they will become inactive, overweight, and obese

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INTRODUCTION

Researchers have discovered that a preschooler's nutrition can be highly influenced by the physical, socio-cultural and economic factors of the home environment, along with the attitudes and behaviors of parents (Ministry of Health, New Zealand, 2012). Children are dependent on parents and caregivers for the provision of their meals and food, thus providing them with the greatest influence on their dietary habits (Ventura and Birch, 2008). "Demandingness", a "behavioral control over the child", and responsiveness a "warmth and supportiveness for the child" (Ventura and Birch, 2008) are different parenting styles which can be classified thus according to Venture and Birch (2008): authoritative, authoritarian, indulgent or neglectful. These parenting styles are thought to either facilitate or undercut parenting practices and behaviors as they relate to the formation of a child's eating habits or preferences. Patrick, Nicklas, Hugh and Morales (2005) have furthered that parenting style should focus on the feeding behaviors of children based on what food items were available.

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Also, LeVine (1998) reiterated that all parents have a specific set of goals for their children as they develop, and the parenting practices will "differ depending on any perceived threats to these goals parents have set for their children". The nutritional needs of toddlers have been debated over the years by Child care experts, Pediatricians, Nutritionist, Dietitians, and Parents. The age old question is: 'How many calories should my toddler be consuming daily?' Experts have come up with an average figure for toddler's ages 1 to 3 years old to maintain a healthy weight; it is recommended that they consume between 1000 to 1400 calories in 24 hours (Coleman, 2014). Coleman (2104) further indicated that the more active the toddler, the more calories they will require, than those who are not so very active. And the older toddlers will need more calories than the younger ones. However these calorie figures are tentative; but should ensure that children receive a well balanced meal containing a wide variety of food items from each food group daily. The Antigua and Barbuda Food Based Dietary Guidelines emphasize the use of foods from all the food groups in order to maintain a well balanced daily diet – starchy foods (whole wheat, rice, green bananas, cassava, yam, oats, bread, roti); peas, beans and nuts; food from animals (eggs, fish, milk, lean chicken); vegetables (these can either be

cooked or raw); fruits (mangoes, bananas, water melons, golden apple); fats and oils; and sugar and sweeteners. In addition a recommended amount of one liter of water or more per day, pasteurized milk and 100% fruit juice are suggested for toddlers and preschoolers (Coleman, 2014), to prevent dehydration and to supply the body with well needed nutrients. WHO (2004) informed that toddlers and preschoolers are very busy and active individuals, with a short attention span. Keeping them engaged and occupied can be a challenge for any parent, caregiver or teacher. Some in-door activities for preschoolers may include: playing a musical instrument and singing nursery rhymes; dancing; jumping; blowing bubbles and letting them catch them; picture reading; matching items that are the same; building blocking; naming and touching body parts; counting fingers and toes; creating objects with play-doh; stringing beads; and any other interesting indoor activities that one can create (Wake, 2007).

In addition, Wells (2000) indicated other out-door activities for preschoolers to include but are not limited to the following: simple, short, hiking trails; jumping rope; bicycle riding with safety gear; swimming with safety gear; nature walks on the beach, in the park or up a hill; playing on the swing or slide or climbing bars or monkey bars; gardening; and starting a collection of either rocks, shells, seeds, flowers or leaves. Being physically active is a very important way for preschoolers to learn healthy life style habits and exert energy, build strong bones, develop muscle strength, flexibility and endurance and reduce the chance of being overweight and obese (Wells, 2000). It also reduces the development of type 2 diabetes and cardio-vascular diseases (Coleman, 2014, New Zealand Ministry of Health, 2012, O'Connor et al., 2013, Jago et al., 2011, Kremers et al., 2003, Wake et al., 2007, Whittaker et al., 1997). This study sought to document the parental practices of pre-schoolers in Antigua with regard to the preschoolers' nutrition and level of activity with a view to identifying if the parental practices has inclination to the observed weight issues among children.

Aims and Objectives of the Study

This study was undertaken to examine the level of activity along with the nutritional habits of preschool age children at a government owned Preschool in Antigua.

MATERIALS AND METHODS

Design

This is a descriptive qualitative study of the practices of preschoolers' level of activity and their parent's nutritional practices regarding their nutrition at a selected government owned preschool.

Population

The population for the study comprised all parents of the preschoolers (n=30) attending the Simon Bolivar Pre-School in Antigua. This is the largest preschool in Antigua/Barbuda. Antigua is the largest of the twin Island state of Antigua /Barbuda, about 281sq. km a population of about 85, 632 situated in the West Indies, Leeward Islands in the Caribbean

region with the economy heavily reliant on tourism (Government of Antigua and Barbuda, 2014)

Instruments for data collection

A 3-pronged data collection devices were designed; namely; (a) a questionnaire consisting of 30 items structured to get information on demographics of the parents of preschoolers in Antigua as well as other pertinent information pertaining to the study variables (nutrition and level of children's activity); (b) a structured interview with the teachers of the preschoolers at the Simon Bolivar Preschool, Antigua, aimed at eliciting information from the teachers about their perceptions of their pupils nutritional practices and activity level; and (c) an observation of the food packs of the preschoolers to ascertain their number and their basic nutritional make ups.

Data analysis

The demographic information was compiled as absolute numbers and where appropriate, summary statistics such as means and standard deviations were computed. The data from the observations and interviews were recorded and qualitatively presented as statements.

Limitations

There is only one Government owned preschool in Antigua, hence only one school was used. It can also be observed that only 30 preschoolers and 22 of their parents were engaged in the school. Antigua is a relatively very small Island twin state in the Caribbean hence samples engaged in the study appears small in number; they however represent 100% of the preschoolers, and 73.3% of the population of the parents.

RESULTS

Quantitative Variables

The preschoolers (N=30) are made of 46.7% boys and 53.3 % girls. Their parents are mostly single (45.5%), with their education ranging from Bachelor's degree or more (13.3%) to primary or lower level of education (27.3%) Table 2. It can also be observed that the preschoolers' parents' mean age is 33 years with a standard deviation of 12.2. The Parents' earnings averaged 59,100.00 per annum. It can be noted that the children's average fluid intake is 4.4 ounces while 3.5 items were packed for the preschoolers, made up of fruits, potato chips, corn curls, cheetos, cheese ball, cake, cookies, biscuits and raisin. Their preschoolers' outside activity levels were estimated by their parents at 61.3 minutes per day Table1.

Table 1. Means and Standard Deviations of Selected Variables

	Mean	Standard Deviation
Parents age	33.0	12.1
Earnings/household'000	59.1	12.6
Children's Average water intake in ounces	4.4	1.3
# of items packed per child	3.5	1.3
Outside activity of children in minutes	61.3	13.2

Table 2. Demographics in absolute nos. and their percentages (children N=30, parents N=22)

Children's gender	Frequency	%
Boys	14	46.7
Girls	16	53.3
Marital Status		
Married	6	27.3
Single	10	45.5
Common Law	4	18.1
Divorced	2	9.1
Highest educational level attained by Parents		
BSc. or more	3	13.4
A 'level/Assoc. Degree	3	13.4
Secondary school	10	45.5
Primary or lower	6	27.3
Activity level(Children/Parent)		
Very active	14/8	63.3/26.7
Active	6/16	27.3/53.3
Somewhat active	2/5	9.1/16.7
Inactive	0/1	0/3

However, opinions of the parents and the teachers were sought with regard to their perceptions of the preschoolers' activity level. Clearly, whereas the parents thought that their children were 63.3% very active, 27.3%, and 9.1% very active, active, and somewhat active respectively, their teachers indicated that 26.7%, 53.3% and 16.7% of the children were very active, active, and somewhat active respectively. No parent indicated that his/her child was inactive while the teachers indicated that 3% of the children were inactive Table 2.

Qualitative Research Results

On teachers' perceptions of the preschoolers' parents' understanding of providing a well balanced meal to their children daily and remaining physically active.

The participants generally agreed that parents did not understand the importance of eating fruits, vegetables, drinking water and engaging in appropriate level of activity for the preschool age child daily. Participants reported that when these preschoolers are at school they the teachers automatically become the child's role model.

Quotes from participants

Teacher 1: "I know the parents don't understand the importance of giving fruits and veggies to their child, because you have the corn curls arriving in the lunch bags every week. We need playground equipment, and it's the administrative staff that's struggling to raise funds for this equipment. Not that it is not the schools responsibility to furnish the play ground, but as a parent if you don't see a functional play ground them it is your responsibility to find out how you can help your child in this way".

Teacher 2: "On a whole I think it's a matter where the parents are not putting themselves out to ensure that their child eat healthy, because every week you have to remind them that at 10am the children drink water and eat fruits only".

Teacher 3: "Yes, I think the majority of the parents know how important it is to feed their child a healthy balanced meal daily, in conjunction with outdoor physical activity/play".

Teacher 4: To parents a snack means something in a brightly colored wrapper, and that doesn't bother them at all. Limited outside equipment is available for the children to play with, and not many of the parents ask why".

On teachers' estimation of how the preschoolers attended school with fruits and vegetables, the teachers were requested to use a scale of 1 to 5 - with 1 being the least number of times and 5 being the most times preschoolers bring fruits and vegetables to school.

Teacher 1: I will say about 3½ times, because most of the children will bring fruits and vegetables but some won't.

Teacher 2: About 5 times. Some children eat fruits and vegetables every day.

Teacher 3: 2 times per week – and most often you see the vegetables left in the food container.

Teacher 4: I would say about 2½ times, because some children are accustom to eating their veggies at home and will eat these first.

On any suggestion on how to make parents and preschooler's to be more aware of the importance of eating a well balanced meal daily and to remain physically active.

Teacher 1: "Educational workshops for parents may work".

Teacher 2: "With the National School Meals Program at our school we try to ensure the children eat their veggies, drink their water, and remain active on a daily basis".

Teacher 3: "Placing a food-based guidelines poster in each classroom, and from time to time throughout the day point out to the children the important food groups".

Teacher 4: "So there is no outdoor play equipment, but games like racing, hola hope, ring games, and hop scotch, are played when it is not raining".

DISCUSSION

Researchers have indicated the importance of early nutrition interventions and their relationship to cognitive ability in the short- and long-term. An example is Kleinman (2014). It is also clear that both nutrition and early stimulation programs work better when children benefit from them simultaneously (Kleinman, 2014). From this study, we found out that the fluid intake of the preschoolers in Antigua was estimated at 4.4 ounces. This is way below the requirement of about 12 ounces (AAP, 2001; AAP 2014). Although the preschoolers' parents merely estimated, their estimation was dangerously low compared to the commendation of approximately 10 ounces for preschoolers of the ages of the subjects in the study.

One would think that as the period at school is approximately one half of the wake time for the preschoolers, we hope that the assumption that they would make up the rest of the fluids from the remaining periods that the preschoolers would be out of school. The finding that an average of 3.5 snacks was packed for the preschoolers each at this school suggests that the parents pay attention to their feeding while in school. Although we did not seek to find out the proportion of the different kinds of snacks, but it is informative that most of the snacks supplied were among items to be discouraged, including gummies, biscuits, and cookies. This observation conforms with the study of Ludwig (2014) where the trend is clear that first time attendees to primary health care centre in the Island for children 0-5 years had their weights classified as overweight or obese averaging more than 7% in Antigua (Ludwig, 2014). The delicate balance between making the preschoolers to snack enough with all the six food groups at their required quantities as advocated by the Food-Based Guidelines of Antigua and Barbuda and as well ensure that the preschoolers do not get more than the required quantity should be maintained to avert the dangers associated (Niclaus et al, 2005; American Academy of Pediatrics, 2001 and Dudek, 2010).

Of interest is the variations in perceptions between on one hand the parents and on the other hand the preschoolers' teachers. We find it is informative that most (63.7%) of the parents believe that their children were active or very active compared to their teachers' perceptions of the preschoolers' level of activity who mostly indicated that their children were 26.7% active or very active. Many parents of overweight children do not see their child as overweight and not worried about it (Kleinman, 2014). Being active is advocated for preschoolers as those activities aid with their communication. Being physically active is a very important way for preschoolers to learn healthy life style habits and exert energy, build strong bones, develop muscle strength, flexibility and endurance and reduce the chance of being overweight and obese (Wells, 2000). This further reduces the development of type 2 diabetes and cardio-vascular diseases (Coleman, 2014, New Zealand Ministry of Health, 2012, O'Connor et al, 2013, Jago et al. 2011, Kremers et al, 2003, Wake et al, 2007, Whittaker et al, 1997). Hence it is equally important that both parents and their teachers should all be working towards achieving a healthy lifestyle for the preschoolers'

Conclusion

Good nutrition in the early years of life can have a profound effect on preschoolers' health status, as well as their ability to learn, communicate, think analytically, socialize effectively and adapt to new environments and people. Good nutrition is also the first line of defense against numerous childhood diseases, which can leave their mark on a child for life (Sagan and Druyan, 1994). It is also well supported that children benefit when both nutrition and early stimulation programs. These results should concern any parent or teacher with preschool age children – ages 2 to 5 years old knowing that diets devoid of sufficient quantities of fruits, vegetables and water are a precursor to having children which may lead them to being inactive, overweight, and obese. Studies have also

found a link between inactivity, chronic diseases and overweight and /or obesity in children. Many parents of overweight children do not see their child as overweight and not worried about it. Children generally mimic their parents, including what they eat. Therefore it is critical that parents understand the importance of the activity and nutritional needs of preschoolers in order to improve their overall health and get help in preventing the development of any chronic, life-threatening diseases.

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