University of the District of Columbia

Community Outreach and Extension Services (COES)

Agricultural Experiment Station (AES)

"Integrated Approach to Prevention of Obesity in High Risk Families"

September 2009

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In participation with this multi-state project, Professor Liang's research team develops fuzzy-set-theory-based methodologies for the measurement of behavioral differences to identify key behaviors in childhood obesity. The identified behaviors will be used by health and nutrition professionals on this project team to develop an integrated strategy for childhood obesity prevention.

Facts of Interest:

- The proportion of adults who are overweight increased substantially between 1980 and 2002. By 2002, 65% of U.S. adults (20-74 yrs of age) were overweight and 31% were obese.
- Obesity rates are higher among Hispanic women (39%) than White women (31%) and even higher (50%) among African-American women.

In recent years, the conditions of overweight and obesity have reached epidemic proportions in the United States. The proportion of adults who are overweight increased substantially between 1980 and 2002. By 2002, 65% of U.S. adults (20-74 yrs of age) were overweight and 31% were obese. Likewise, obesity has become the most prevalent nutritional disease of children and adolescents. Children from low socio-economic status and racial/ethnic minority groups tend to have higher rates of obesity in comparison to other groups. Among adults, obesity rates are about 28% for men regardless of racial/ethnic group membership. Adult women have higher rates of obesity than males. Obesity rates are higher among Hispanic women (39%) than White women (31%) and even higher (50%) among African-American women. It is well known that chronic disease risks increase with increasing body weight. It is also clear that overweight and obese children are likely to remain overweight and obese adults and to develop chronic diseases at younger ages.

This USDA multi-state project has the following objectives:

1. Conduct an expert field review of key behavioral measures purported to contribute to excessive weight gain in children aged 4-10 years old.
2. Identify anthropometric and physiological measures that could be used to differentiate families within the target population in the community setting.
3. To assess parent-child interactions in the target population as they

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relate to key behaviors identified as being associated with resilience to overweight.

4. Determine appropriate tools to effectively measure salient behavioral differences between low-income families in the parent-child relationships identified in Objective 3 for the community setting.

5. Design a framework for prevention strategies targeting the development of resilience behaviors.

ABOUT DR. LILY R. LIANG

Dr. Lily R. Liang is an associate professor in the Department of Computer Science and Information Technology at the University of the District of Columbia. She received her Doctorate degree in Computer Science and Engineering from the University of Nevada in 2004. Dr. Liang's research interests include bioinformatics, data mining, machine intelligence, fuzzy logic and digital image processing. Currently, she has several funded research projects in which she collaborates with professionals in biology, health and nutrition, developing data mining techniques in these areas. Her most recent award is from the National Science Foundation for a project involving workforce development in information assurance. She has published a number of conference and journal papers and has made presentations at national and international conferences.

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