

Georgette Yetter  
442 Willard Hall, Oklahoma State University  
Stillwater, OK 74078  
Office: 405-744-2445  
Fax: 405-744-6756  
Email: [georgette.yetter@okstate.edu](mailto:georgette.yetter@okstate.edu)

I am interested in studying ways to enhance the healthy physical activity and eating behaviors of American Indian children and youth enrolled in K-12 schools. This research agenda brings together two strands of my scholarship to date: (1) a pair of research syntheses addressing obesity prevention in schools (Pyle et al., 2006; Yetter, in submission), and (2) a major study of over 700 Choctaw youth aged 14-21 in Oklahoma. This latter investigation examined relationships among social problem solving skills, hope for the future, and American Indian acculturation. Preliminary results suggest that compared to males, females value traditional American Indian practices more highly and exhibit a more negative problem-solving orientation, whereas males tend to a more impulsive and careless problem-solving approach.

I am currently working with the administration and teaching staff at Sequoyah School, a Cherokee boarding school in Talequah, Oklahoma, planning a study that will draw on my previous work. This investigation will examine the relationship between body mass index (BMI), internalizing symptoms, specific health risk behaviors (unhealthy diet and physical inactivity), and acculturation among American Indian youth ages 14-18. It also will assess students' exercise preferences. I anticipate that youth with higher BMIs will report more internalizing symptoms, less healthy diet, less physical activity, and less identification with traditional American Indian traditions. While this study will answer research questions important for the school psychology community, it also will gather pilot data that Sequoyah School can use to develop and write grants to fund a physical education program for their students. They currently have no P. E. program.

Over the next 3-5 years I intend to expand my work into Bureau of Indian Affairs-run K-12 schools, helping them develop and carry out overweight prevention programs

consistent with the schools' resources and goals. I will continue the systems-level consultation approach I am currently carrying out at Sequoyah School. This will necessitate maintaining a flexible agenda, in that the details of the programmatic aspects I study will depend on the needs and perceptions of school staff. Based on existing research, however, there are two strands of research I hope to carry out. The first strand targets increasing physical activity in the schools. Based on prior research showing that girls and boys have different physical activity preferences and that overweight youth prefer individualized activities, I propose separate P. E. for girls and boys, to offer choices of moderately vigorous activities that teach lifelong skills, require that students adhere to their chosen activity for a 9-week period, and participate for at least 45 minutes per day, every day. I would assess their attitudes toward physical activity, BMI, and fitness at the end of each 9-week period.

The second research strand that holds special interest for me targets healthy eating for American Indian youth while raising cultural awareness and pride and teaching healthy food preparation skills. Specifically, I propose to work with a dietician to develop recipes that derive from traditional American Indian cultural practices; include education about traditional American Indian eating habits into the BIA schools' already-existing (mandatory) classes on Indian culture; teach food preparation in home economics classes; and promote schoolwide and community-wide activities, such as 'food fairs'.

This project will add to the obesity prevention literature in identifying system-wide interventions that make for effective universal prevention programming for American Indian children and youth. It also will demonstrate the effectiveness of the participatory research model as applied in rural AI, K-12 schools (Nastasi, 2002; Nation et al., 2003).

Georgette Yetter, Ph.D.

I am interested in studying ways to enhance the healthy physical activity and eating behaviors of American Indian children and youth enrolled in K-12 schools. I am currently working with a Cherokee boarding school to examine the relationship between body mass index, internalizing symptoms, specific health risk behaviors, and acculturation among American Indian youth. Over the next 3-5 years I intend to expand my work into Bureau of Indian Affairs-run K-12 schools, helping them develop and carry out overweight prevention programs consistent with the schools' resources and goals.

I will continue the systems-level consultation approach I am currently carrying out at Sequoyah School. This will necessitate maintaining a flexible agenda. There are two strands of research I hope to carry out. The first strand targets increasing physical activity in the schools. Based on prior research showing that girls and boys have different physical activity preferences and that overweight youth prefer individualized activities, I propose separate P. E. for girls and boys, to offer choices of activities that teach lifelong skills, require that students adhere to their chosen activity for a 9-week period, and participate for at least 45 minutes per day, every day. I would assess their attitudes toward physical activity, BMI, and fitness at the end of each 9-week period.

The second research strand targets healthy eating while raising cultural awareness and pride and teaching healthy food preparation skills. I propose to work with a dietician to develop recipes that derive from traditional American Indian cultural practices; include education about traditional American Indian eating habits into the BIA schools' already-existing (mandatory) classes on Indian culture; teach food preparation in home economics classes; and promote schoolwide and community-wide activities, such as 'food fairs'.

### ***Background***

American Indian (AI) youth experience poorer physical health compared with their European American peers. Roughly 22% of AI adolescents have physical health in the poor-to-fair range, roughly three times the rate as for the general population (Blum et al., 1992; Goodman, 1999). Ample evidence documents a strong link between AI adolescents' health and their health-related behaviors. Among AIs, poor physical health is positively associated with suicide attempts, substance abuse, and physical and sexual victimization, and negatively predictive of school performance (Mechanic & Hansell, 1987).

American Indians are at particularly high risk of overweight. The prevalence of overweight among AI children and adolescents is between 25% and 46%, far higher than the 13% estimated for American youth as a whole (Caballero et al., 2003; Centers for Disease Control and Prevention, 2007). Not only do AI young people experience epidemic levels of overweight-related chronic physical diseases, including cardiovascular disease and type 2 diabetes (Stevens et al., 2003), but they also show higher levels of internalizing disorders and low self-esteem (Datar & Sturm, 2006; Lewinsohn et al., 1999; Masten & Coatsworth, 1995; Mustillo et al., 2003; Strong et al., 2005). Moreover, it appears that child overweight may be a causative factor for low self-esteem (Hesketh, Wake, & Waters, 2004). Addressing the problem of overweight among AI young people therefore holds potential for disrupting some of the pathways to physical and emotional problems that are prevalent in this population.

Both overweight and internalizing problems are less common among individuals who participate regularly in moderate to vigorous physical activity (Hallal et al., 2006). Although the precise amounts of activity needed to reliably reduce body weight and

central obesity (visceral fat) in young people has not yet been definitively ascertained (and varies according to age and gender), a recent meta-analysis concluded that at least 155 to 180 minutes per week of aerobic exercise was needed to decrease body fat in young people with overweight (Atlantis, Barnes, & Singh, 2006). Aerobic exercise programs also improves both short-term and long-term psychological outcomes (specifically, depression, anxiety, and self-concept; DiLorenzo et al., 1999). American Indian adolescents are, however, less likely than U. S. youth in general to engage in regular moderate-to-vigorous exercise and to eat a nutritious diet. Thus, lack of exercise and healthy dietary habits are an especially strong health risk factor for American Indian youth (Murphey et al., 2004; Neumark-Sztainer et al., 1996).

One factor hypothesized to act as a protective mechanism for AI youth is their degree of identification with AI traditional culture. These findings have been mixed, but some investigations have reported that more strongly enculturated youth are less likely to be involved in health risk behaviors (Harrell, 2000; Weaver, 1999; Zimmerman et al., 1994). Additional inquiries are needed to better understand the possible impact of enculturation.

### ***Anticipated Budget***

Over the next 3-5 years I plan to expand my research program (described in the attached document) to 3 or more K-12 BIA schools. I would estimate that the costs of the physical activity portion of the program would include \$60,000 per year to hire a P. E. teacher, a one-time cost of \$10,000 for gym equipment, \$20,000 per year for a graduate research assistant, and \$10,000 per year for travel to and from the school site (estimated total \$100,000 per school). The estimated cost of carrying out the dietary component of

the program would include \$60,000 for the consulting services of a dietician, \$20,000 per year for a graduate research assistant, \$10,000 to advertise and carry out food fairs, and \$10,000 per year for travel to and from the school site (estimated total \$100,000 per school).