

FASD Prevention in Northern Native Communities: A Practical School-Based Approach

Steven Jacquier, Northern Studies Program, University of Alaska, Fairbanks, AK

Judith S. Kleinfeld, Psychology Department and Chair, Northern Studies, University of Alaska, Fairbanks, AK

David Gilliam, School of Psychological Sciences, University of Northern Colorado, Greeley, CO

The public school project "FASD in Lab Mice" was developed in Native village communities of rural Alaska and has been implemented in rural Alaska for over ten years; this approach has also been used with students in Colorado. Students design and perform a series of experiments comparing control and treatment groups of mice, changing one variable (alcohol) to test exposure outcomes among offspring. Consistent dramatic results produced by maternal exposure to a single ethanol dose during pregnancy serve as the basis for student-generated experiments. Students become junior scientists learning lab procedures (e.g., how to humanely handle and manage laboratory animals, make experimental solutions, mouse gavage techniques, caesarian sectioning, and performing fetal examination), mathematics (data analysis), economics (figuring budgets and costs for the project and of FASD in humans), practical job skills (measuring, logging data on forms, working and communicating cooperatively as team members), and accomplishing multiple objectives in science, health, social studies, and English as they investigate alcohol and its effects on both adult and developing fetal mice and then relate those findings to humans. Advanced student experiments include examining the importance of maternal versus fetal genotype in FASD and comparisons of dosing regimens to examine questions of tolerance or sensitization. Native American Indian, Alaska Native, and non-Native students participating in these experiments were chosen to attend regional and international high school science fairs, won multiple awards, and have gone on to studies, graduation, and careers at MIT, Brown, SCAD, and Sloan-Kettering among other significant institutions. Project participation engaged students in active FASD prevention efforts in their own and other Native communities. Most importantly, this prevention education approach appears to have a dramatic effect on improving Alaska Native students' understanding of the lifelong neurological and physical damage created in children by parents' drinking during pregnancy. The cultural compatibility of this approach and strong support received in Native communities is emphasized. Lessons learned indicate specifically the need for collaborative FASD prevention within Native communities to use project-based kinesthetic learning directly experienced as meaningful by the learners. Long-term quantitative as well as qualitative research on this program model's effectiveness is needed.