Medical Xpress

Farm and germ education go hand in hand

October 16 2013

School children demonstrated significantly increased knowledge of germ spread and prevention on a farm after working on an interactive lesson about microbes. Published October 16, 2013, in the open-access journal *PLOS ONE* by Meredith K. D. Hawking and colleagues from Public Health England, these results show the measurable benefits of education in increasing children's knowledge about the risk of infection during school farm visits, and the spread of harmful germs.

Researchers quizzed 210 nine-to-eleven-year-old students from rural areas and towns across England to understand the knowledge the students gained about reducing potential germ infections from farm visits. The students were first presented with an interactive farm hygiene lesson by their teacher using e-Bug, a European-wide educational resource that covered microbes, as well as the spread, prevention, and treatment of infection. Knowledge gain was measured using a 29-statement questionnaire administered to the students once prior to, and then once after, the lesson. The test was divided into three topics: 'introduction to microbes,' 'hand hygiene,' and 'farm hygiene.'

Results showed a significant improvement in farm hygiene and microbiology knowledge after the lesson, especially with respect to statements about microbe awareness on the farm, and about preventative measures for reducing the spread of microbes. In the 'introduction to microbes' section, the overall post-lesson scores were significantly greater than pre-lesson scores for girls, showing a 21% increase in knowledge, as well as boys, with a 14% increase. In the 'farm hygiene' section, the girls increased their knowledge 18% and boys 11%. There

was a ~13% total increase in knowledge of hand-to-mouth behavior, such as 'it is ok to eat your sweets while walking around the farm.' In general, post-lesson knowledge levels were similar between boys and girls, at 80% and 83%, respectively, although girls had lower pre-intervention knowledge about microbes and farm hygiene when compared to boys. Hawking adds, "Our study showed that the e-Bug farm hygiene lesson plan was an effective way to teach children what they can do to stay healthy on a farm visit. It is important that children know how to protect themselves by washing their hands and avoiding hand to mouth behaviours, to ensure they can enjoy the experience without being at increased risk of becoming unwell."

More information: Hawking MKD, Lecky DM, Verlander NQ, McNulty CAM (2013) Fun on the Farm: Evaluation of a Lesson to Teach Students about the Spread of Infection on School Farm Visits. *PLoS ONE* 8(10): e75641. DOI: 10.1371/journal.pone.0075641

Provided by Public Library of Science