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Are My Personal Care Products Safe to Use? Interactive Risk Assessment Training for Summer Interns

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Students enrolled in college are often unaware of toxicology and its basic tenet. To increase awareness of toxicology principles, we designed an interactive training in risk assessment for students participating in a 10-week summer research internship at Rutgers University. This training session was comprised of a 1) 25-minute didactic lecture on risk assessment, 2) two team-based activities, and 3) design of a custom hand soap. For the first team activity, students were provided with index cards with the names of 6 chemicals and asked to order them according to their predicted LD_{50} values. For the second team activity, students were provided preclinical toxicity data for a new hydrating lotion formulation and asked to identify the NOAEL and LOAEL and calculate a reference dose. Six pre- and post-test knowledge questions were conducted. For the custom hand soap, each student was provided a base liquid soap along with colorants, fragrances, and materials for mixing, packaging, and labelling their final products. Activities were rated using a 5-point Likert scale (1-poor to 5-excellent). Twenty-one summer interns participated in the risk assessment training and response rates on pre-/post-test questions ranged between n = 16–20. The percentage of correct responses increased for all 6 questions with a mean normalized gain of knowledge of 62% (range: 21%-94%). At the end of the internship, the personal care product safety lesson was one of the most favorably rated career development activities (mean: 4.4, SD: 1.3). An interactive approach that combines didactic instruction, case studies, and a fun activity can be used to convey the fundamental principles of risk assessment.

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