



CALIFORNIA SCIENCE & ENGINEERING FAIR 2019 PROJECT SUMMARY

Name(s) Shay Sharma	Project Number S0422
Project Title The Impact of a Skin Care and Skin Cancer Prevention Lesson on the Knowledge and Behaviors of High School Students	
<p style="text-align: center;">Abstract</p> <p>Objectives</p> <ol style="list-style-type: none">1. To create a lesson plan aligned with the California Health Education Content Standards that teaches high school students skin care and skin cancer prevention practices.2. To incorporate this lesson plan into the health education curriculum of a California school district.3. To identify the impact of this lesson plan through a school-wide study on high school students knowledge and behaviors toward skin care and skin cancer prevention practices. <p>Methods</p> <p>I created a Skin Care and Skin Cancer Lesson plan aligned with the California Health Education Content Standards, obtained approval to incorporate this lesson into the health education curriculum of a California school district, and evaluated its impact through school-wide written surveys on the knowledge and behaviors of high school students.</p> <p>Results</p> <p>Written surveys were distributed to 2,688 high school students. A total of 1025 correctly completed surveys were returned resulting in a return rate of 38.1%. I defined an increase from Survey 1 to Survey 2 (knowledge gain), a decrease from Survey 2 to Survey 3 (knowledge decay) and, an overall increase from Survey 1 to Survey 3 (knowledge persistence). A statistical analysis of the data was performed using paired t-tests within each grade level and among the overall population of students providing 30 pairs of means and standard deviations. The calculated test statistic was compared to a critical t-value yielded a conclusion to the hypothesis test. The paired t-test hypothesis test was repeated for all 30 sets of data at the 95% confidence level. For student behaviors the number of students reporting wearing sunscreen zero days a week decreased by approximately 12.5%, the number of students reporting wearing sunscreen 5-7 days a week increased by more than half, and the number of students who examined themselves for changing moles increased by approximately 9.8%.</p> <p>Conclusions</p> <p>I recognized the serious problem in the lack of knowledge of skin care and skin cancer prevention practices in high school students, created a concise instructional lesson plan, obtained approval for its use by all teachers, and conducted a school-wide study identifying the impact of the lesson on high school students. The Skin Care and Skin Cancer Lesson was well received, minimally disruptive and increased students knowledge and behaviors of skin care and skin cancer prevention.</p>	
Summary Statement I created a concise instructional lesson plan on skin care and skin cancer, incorporated into the school district curriculum, and conducted a school-wide study of 2688 students to evaluate the impact of the lesson on high school students.	
Help Received I was advised by my mathematics teacher and a university statistician on the ideal tests for the statistical analysis of my study but the analysis was done by myself.	