Am I Effective?

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The intent of this project is to identify the efficacy of antibacterial soap when compared to non-antibacterial soap. In 2016, the FDA banned antibacterial products which contained triclosan, while other reagents were kept active due to lack of research. Based on the studies performed, it appeared that antibacterial soaps containing new antibacterial reagents can cause health risks and are proven to cause antibiotic resistance. Because of this, it is important for society to understand the efficacy of soaps. The project design and research included four rounds where four tests were run in triplicate, during each round with the exception of round 3 where six trials were conducted. The first plate was a negative control plate, the second a positive control, the third, the hand/finger washed with non-antibacterial soap and the fourth plate was the hand/finger washed with antibacterial soap. During round one, only one hand was gloved, and the entire hand was put in the plate. In rounds two through four, both hands were gloved but only a finger was swiped across the plate. The two reagents tested were Benzalkonium Chloride (BZK) and Chlorohexidine Gluconate (CHG). Though visually apparent, statistical tests such a student's t-test and an ANOVA single factor determined that BZK is less effective than non-antibacterial /regular soap, while CHG was equally effective in removing disease causing bacteria. Developing a more effective non-antibacterial soap that can be used regularly but is more cost effective and accessible would be a consumer winning product that would impact society greatly.

Awards Won: