



CALIFORNIA STATE SCIENCE FAIR 2017 PROJECT SUMMARY

Name(s) Jonathan Ko	Project Number S0412
Project Title A Study on Impostor Syndrome and Performance	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Impostor syndrome (IS) is a concept that describes high-achieving people who are unable to internalize their accomplishments, and often feel that they are frauds. This study examined the effect of IS or the lack thereof on performance, with the hypothesis that IS decreases performance.</p> <p>Methods/Materials 41 high-achieving individuals, who are taking AP Calculus BC in junior year at a local public high school, were recruited and identified as the IS and No IS groups per their test results on the Clance Impostor Phenomenon Scale. Control and Experimental groups were assigned randomly among the IS and No IS groups. Three similar texts were provided to the specific groups to read: Impostor Repressing (which represses IS feelings) text to the IS-Experimental group, Impostor Priming (which replicates IS feelings) text to the No IS-Experimental group, Control (which has no effect on the mindsets) text to the IS-Control and No IS-Control groups, before a math test was administered. Student's t-tests were used for statistical analysis.</p> <p>Results 25 out of 41 (61.0%) of the high achieving students were identified as frequently having IS feelings. The average math test score (out of 60) was significantly lower ($p=0.003$, $a=0.01$) in the IS-Control group ($n=13$, 23.9 ± 12.0) than in the No IS-Control group ($n=8$, 40.3 ± 10.9). The average score was significantly higher ($p=0.005$, $a=0.01$) in the IS-Experimental group ($n=12$, 39.0 ± 14.8) than the IS-Control group ($n=13$, 23.9 ± 12.0). In the No IS group, the average test score was significantly lower ($p=0.007$, $a=0.01$) in the No IS-Experimental group ($n=8$, 23.5 ± 12.8) than the No IS-Control group ($n=8$, 40.3 ± 10.9).</p> <p>Conclusions/Discussion IS is prevalent in the population studied. Subjects with IS performed worse on the math test than those without IS, supporting the hypothesis. The Impostor Repressing text improved performance in the IS group while the Impostor Priming text decreased the performance in the No IS population. The Impostor Repressing text may be further developed to serve as a way to mitigate the observed negative effects of IS. Future replications of this study with larger sample sizes from various demographics will provide greater understanding of IS.</p>	
Summary Statement I found that impostor syndrome decreases performance, and that this decrease can be rectified with the aid of a simple immersing text.	
Help Received I was able to inform and gather students with the help of the administration and many teachers at my school. Teachers Ms. Ling Ru Katy Kuei and Mr. Yunor Peralta allowed me to use their rooms for testing. Dr. Sonia F. Khan, M.D., F.A.A.P. provided encouragement and suggestions.	