

Applying Down Syndrome Surveillance Guidelines in Pediatric Primary Care: An Evaluation of Pediatric Resident Knowledge and Self-Efficacy

Abstract P445

Introduction: Down Syndrome is a genetic disorder caused by an increase in copy number of the long arm of chromosome 21, either by whole chromosome aneuploidy or unbalanced structural rearrangement. It is the most common chromosomal disorder in the United States, with an incidence of approximately 1 in 700 live births. Few previous studies have evaluated the efficacy of educational tools to aid pediatricians and pediatric residents in delivering a diagnosis of Down Syndrome, but none has evaluated the efficacy of educational tools in improving knowledge or self-efficacy of pediatricians or pediatric residents in applying Down Syndrome surveillance guidelines.

Methods: This study analyzed pediatric resident knowledge and self-efficacy in applying Down Syndrome surveillance guidelines before and after a didactic educational session using a pre- and post-survey design. Participants were residents at University Hospitals of Cleveland / Case Western Reserve University Pediatric Residency Program and were recruited via email. Responses were excluded from analysis if the participant did not attend a didactic educational session or if the survey response was incomplete. Participant pre- and post-surveys were collected and matched anonymously using REDCap. Descriptive and analytical statistics were performed using SAS 9.4. A mean score (out of 100) of a knowledge assessment was calculated for each participant, as well as a composite mean (out of 5) of a four-item self-efficacy Lickert scale. A paired samples t-test was performed comparing knowledge before and after the didactic educational session using the pre- and post-survey knowledge assessment mean scores. A paired samples t-test was also performed comparing self-efficacy before and after the didactic educational session using the pre- and post-survey Lickert scale composite scores. Finally, a one-way between groups analysis of variance (ANOVA) was performed to evaluate the effect of level of training on the pre-survey knowledge assessment scores.

Results: 83 pediatric residents were invited to participate, and 46 responded. 27 participants remained after excluding incomplete responses. 16 respondents were in their first post-graduate year, 6 in their second year, and 5 in their third year. There was a significant difference in the pre-survey knowledge scores ($M=37.9$, $SD=13.81$) and post-survey knowledge scores ($M=84.0$, $SD=11.27$); $t(26)=13.08$, $p<0.0001$. There was a significant difference in the pre-survey self-efficacy scores ($M=1.9$, $SD=0.66$) and post-survey self-efficacy scores ($M=3.6$, $SD=0.56$); $t(26)=14.92$, $p<0.0001$. There was no statistically significant difference in the pre-survey knowledge scores between levels of training [$F(2,24)=0.78$, $p=0.47$].

Conclusion: Short didactic educational sessions are effective at improving pediatric resident knowledge and self-efficacy in applying Down Syndrome surveillance guidelines in primary care settings. Pediatric residency training does not currently provide sufficient training in Down Syndrome surveillance guidelines, as suggested by the absence of a statistically significant effect of level of training on pre-survey knowledge scores in this study. Short didactic educational sessions should be included in pediatric residency training programs to improve the health of children and young adults with Down Syndrome.

Category:

Education and Research Strategies