Do as I Say; Not as I Do: A Cohort Study of Commercially Insured Families and the Relationship Between Prior Parental Adherence and Future Child Adherence and Persistence to Treatment Across Five Chronic Conditions

Author
Nimke, David James

ISBN
978-1-392-20811-3

Abstract
Numerous factors that influence medication adherence and persistence (MAP) have been identified, and MAP is viewed as a multifactorial process. Children are particularly vulnerable, since their treatment needs are dependent upon a parent or caregiver. This work characterizes MAP in children beginning treatment for attention deficit hyperactivity disorder (ADHD), epilepsy, depression, asthma, and type II diabetes (T2DM) and investigates the potential benefits of incorporating parental and family factors in predictive models for child adherence and persistence to treatment of these conditions.

Condition-specific cohort studies were conducted in an administrative claims database. Dependent children beginning treatments for a selected condition were identified based on the presence of their first prescription fill from 2010 through 2014. Baseline characteristics were measured during the 365 days prior to and including treatment start date, while MAP was measured in the 180-days following treatment start date. Baseline characteristics were grouped together as patient-level, parent-level, and family-level predictors. Six pre-specified multivariate modified Poisson regression models were constructed for each condition and outcome. Model performance was compared based on Akaike Information Criterion, the c-statistic, and net reclassification improvement.

Adherence at 180 days was highest in epilepsy and lowest in asthma: epilepsy (62.78%), depression (43.89%), ADHD (34.72%), T2DM (27.43%), and asthma (9.62%). Persistence at 180 days allowing for a 60-day gap in treatment had a similar ranking order: epilepsy (74.38%), depression (57.78%), ADHD (56.57%), T2DM (45.11%), and asthma (19.02%). Younger patient age groups, oral formulation (asthma), and patient, parent, and family prior adherence to chronic medications were consistently associated with better MAP across conditions. The “best” predictive models across conditions and outcome had c-statistics that ranged from 0.622 to 0.676. Model 4, which contained patient- and parent-level variables, patient’s prior adherence, and parent’s prior adherence, performed the best in 25 out of 30 conditions-outcome-performance measurement scenarios.

Results from this study suggest that MAP in children varies considerably between chronic conditions. Parental/family information from claims data, including prior chronic medication adherence, can inform child healthcare research, likely by leveraging shared pathways and characteristics influencing a family’s healthcare utilization.

Advisor
Dusetzina, Stacie B.

Committee member
Chung, Arlene E.; Greene, Sandra B.; Ryan, Patrick B.; Shea, Chris M.