

Patient Characteristics Associated with Missed Appointments in Pediatric Subspecialty Clinics

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Background

Targeted interventions can lower rates of missed appointments and improve outcomes for patients, providers, and health systems.

- Studies on missed appointments within pediatric subspecialties have been inconsistent, and have often been on a small scale (i.e. one subspecialty, <1000 patients).
- Research in this area should consider aspects of child and family, disease, and treatment (Figure 1), but past studies have often overlooked the impact of disease and treatment.

Objectives

- Quantify the percentage of missed appointments across 14 pediatric subspecialties at Brenner Children's Hospital.
- Identify child and family, disease, and treatment characteristics associated with missed appointments across 14 subspecialties at Brenner Children's Hospital.

Methods

- WF CTSI extracted patient characteristics from 267,151 outpatient appointments between 1/1/2013 - 12/31/18, from 14 pediatric subspecialty clinics at Brenner Children's Hospital.
- Cancellations, imaging/outpatient lab visits, ages >18, and duplicate visits were excluded, leaving 128,117 visits for study.
- Medical complexity was determined using ICD-9/10 diagnosis codes and the Pediatric Medical Complexity Algorithm (PMCA) Version 3.0 (Simon et al. 2018).
- Insurance designation was based on primary insurance at time of visit or scheduling (if no show).
- Characteristics associated with non-attendance were analyzed using both chi-square tests and multiple logistic regression.
- Variables were included in the logistic regression model if $p \leq 0.1$, otherwise only p values < 0.5 were considered statistically significant.

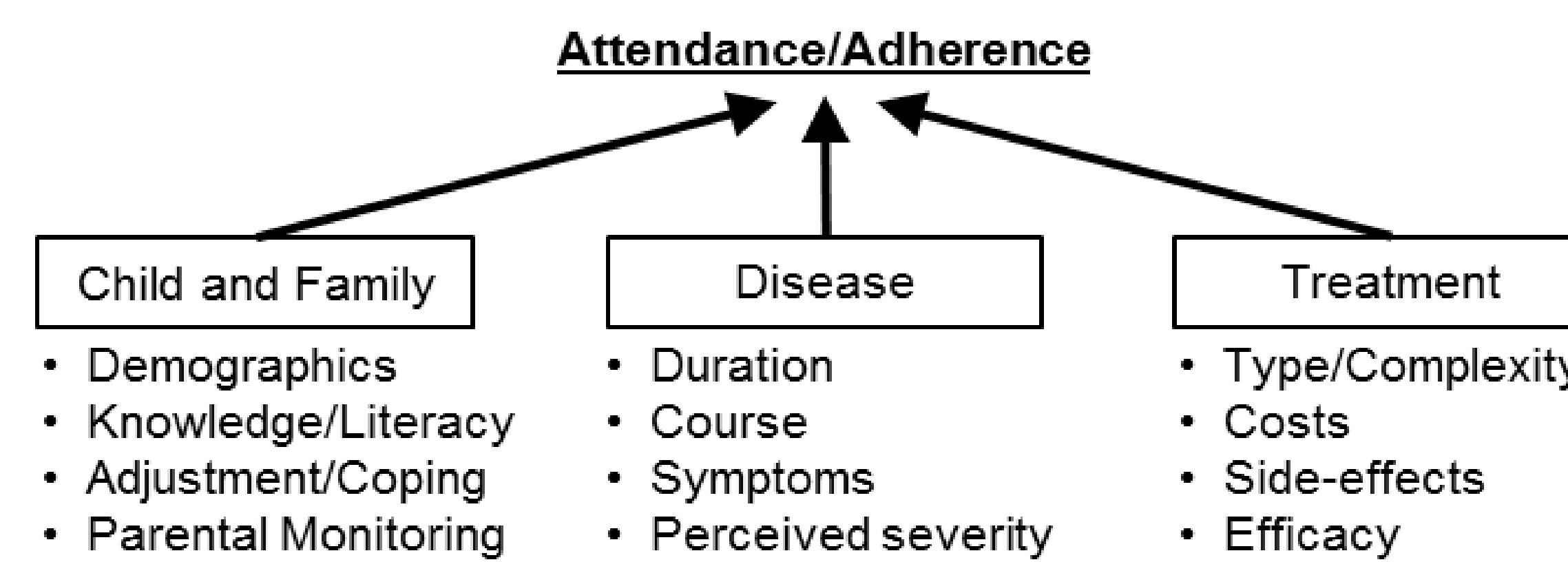


Figure 1: Model of Pediatric Adherence to Medical Regimens (Rapoff, 1998).

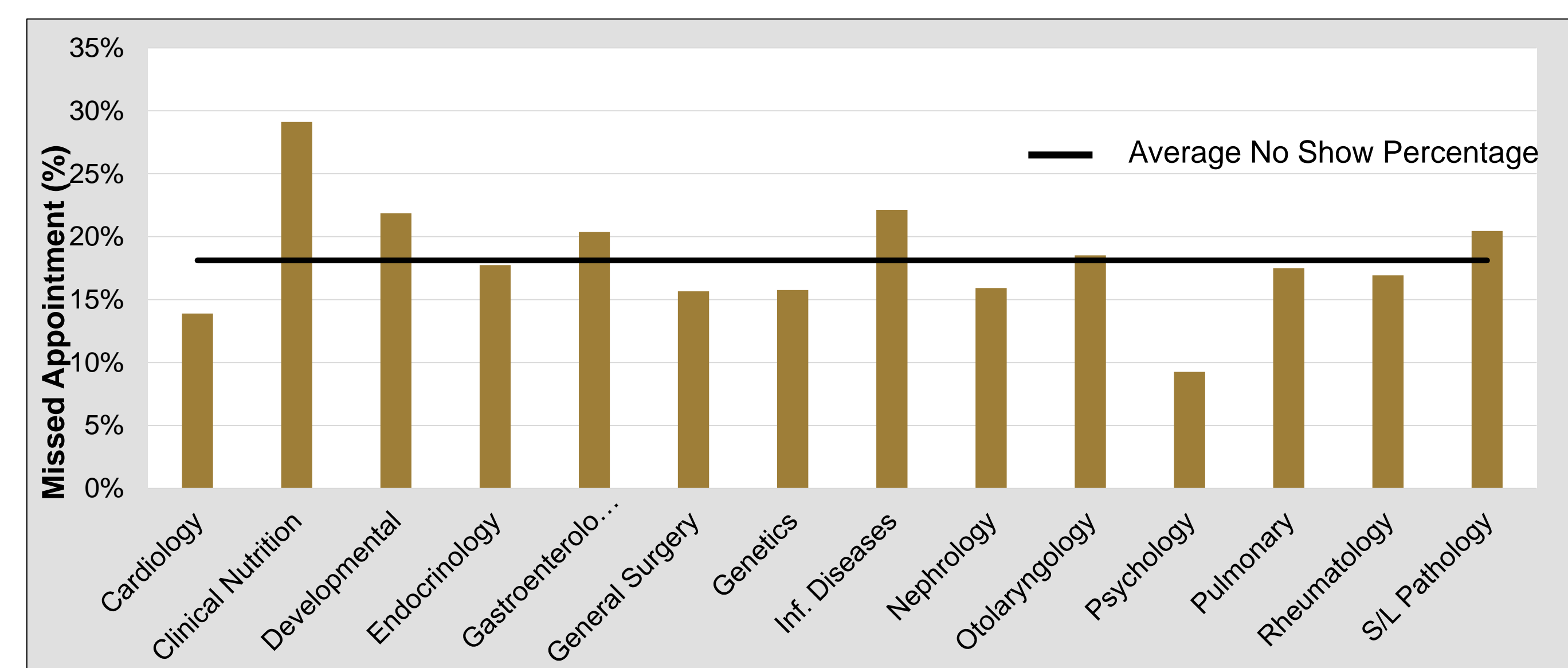


Figure 2: Missed Appointment Percentages of 14 Pediatric Subspecialty Clinics.

	TOTAL N (%)	COMPLETED (%)	NO-SHOW (%)	P-VALUE
AGE				
0-5 years old	54299 (42.4%)	44489 (42.4%)	9810 (42.3%)	0.015
6-11 years old	34416 (26.9%)	28021 (26.7%)	6395 (27.6%)	
12-18 years old	39402 (30.8%)	32403 (30.9%)	6999 (30.2%)	
SEX				
Female	60466 (47.2%)	49570 (47.3%)	10896 (47.0%)	0.421
Male	67651 (52.8%)	55343 (52.8%)	12308 (53.0%)	
RACE/ETHNICITY				
Black	23990 (18.7%)	17578 (16.8%)	6412 (27.6%)	<0.001
Hispanic	19588 (15.3%)	15763 (15.0%)	3825 (16.5%)	
White	76808 (60.0%)	65360 (62.3%)	11448 (49.3%)	
PMCA (COMPLEXITY)				
Complex Chronic (C-CD)	29431 (23.9%)	25613 (24.5%)	3818 (20.6%)	<0.001
Noncomplex Chronic (NC-CD)	21059 (17.1%)	18137 (17.3%)	2922 (15.7%)	
Not Chronic Disease (No CD)	72857 (59.1%)	61016 (58.2%)	11841 (63.7%)	
NUMBER OF MEDICATIONS				
0	14696 (11.5%)	9307 (8.87%)	5389 (23.2%)	<0.001
1-3	32004 (25.0%)	26072 (24.9%)	5932 (25.6%)	
4-7	28164 (22.0%)	23453 (22.4%)	4711 (20.3%)	
>7	53253 (41.6%)	46081 (43.9%)	7172 (30.9%)	
# OF SUBSPECIALISTS				
<=1	68033 (53.1%)	54710 (52.2%)	13323 (57.4%)	<0.001
>1	60084 (46.9%)	50203 (47.9%)	9881 (42.6%)	
INSURANCE STATUS				
Commercial	1751 (1.4%)	1727 (1.7%)	24 (0.1%)	<0.001
Managed Care	38729 (30.2%)	37807 (36.0%)	922 (4.0%)	
Medicaid/Medicare	68273 (53.3%)	62169 (59.3%)	6104 (26.3%)	
Other Gov't	1321 (1.0%)	1273 (1.2%)	48 (0.2%)	
Missing/Unknown	18043 (14.1%)	1937 (1.9%)	16106 (69.4%)	

Table 1: Selected Demographic, Disease, and Treatment Characteristics of Population.

Results

- A total of 128,117 scheduled appointments with 23,204 missed appointments (18.1%) were analyzed.
- Clinical Nutrition had the highest percentage of missed appointments (29.1%), while Psychology (9.3%) had the lowest (Figure 2).
- Other patient characteristics were analyzed, but had weaker associations than those displayed in Figure 3.

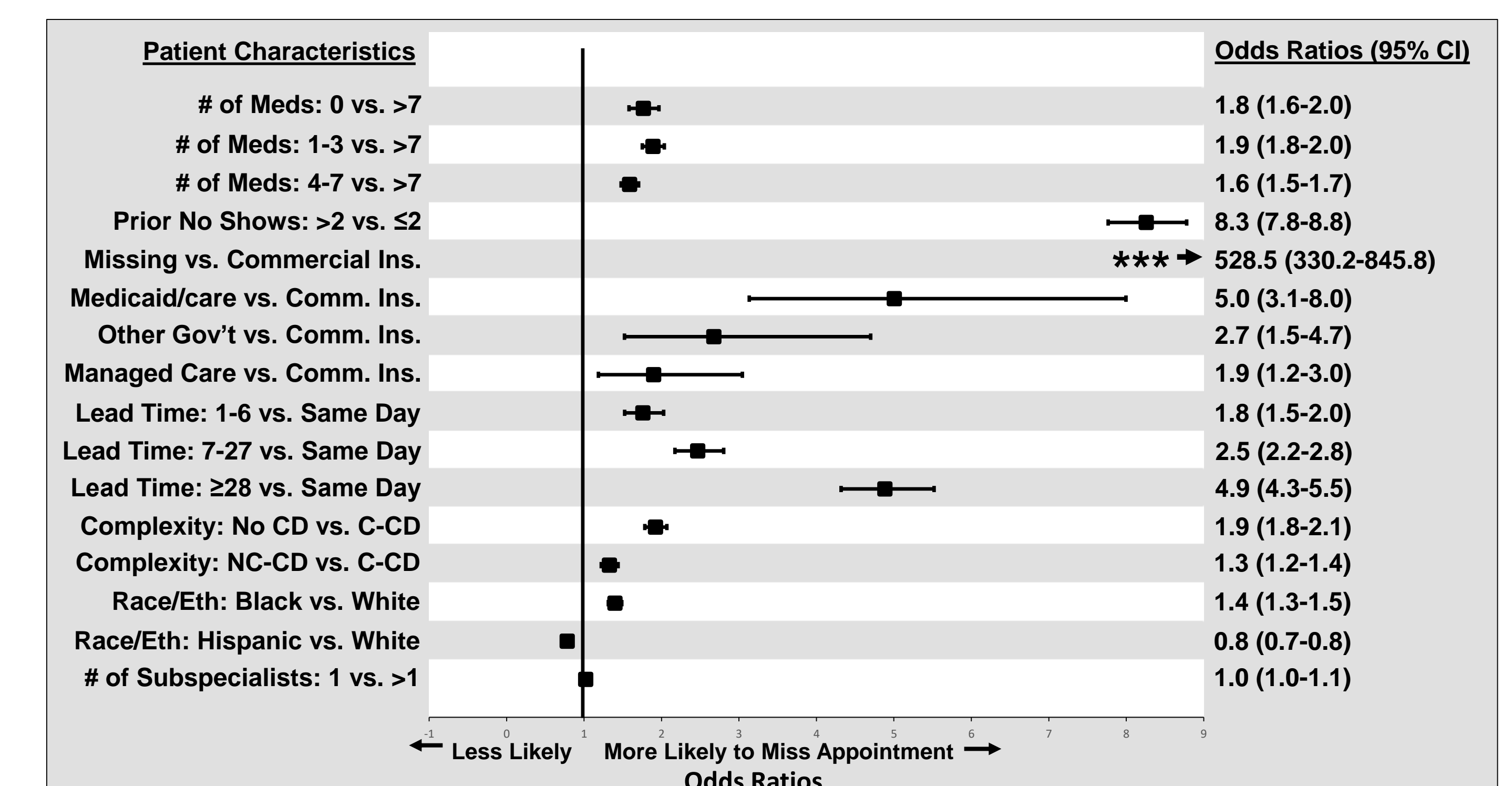


Figure 3: Results of logistic regression modeling: associations between patient characteristics and missed appointments. *** Value could not reasonably fit on graph.

Conclusions

- Associations between missed appointments and non-commercial insurance, appointment lead time, and prior no-show behavior were consistent with previous studies.
- This introduces new disease and treatment variables to consider when studying missed appointments.
- More thorough psychosocial and demographic data should be evaluated in the future.
- Determining if associated variables differ by disease state and/or clinic is an area for future research.

Acknowledgements

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