Comparing Military and Civilian Dentists' Treatment Planning Decisions: Pilot Study

Abstract

Research has been published on the variation in dentists' clinical decision-making. However, research examining differences in clinical decisions between public and private sector dentists has been limited and narrow in scope. With the military healthcare system being comprised of civilian and military providers, it is important to understand the potential differences in diagnosis, treatment planning, and the delivery of care. Objective: The purpose of this pilot study was to compare treatment planning recommendations between civilian and military providers. Methods: Patient level and tooth level data from the 2018 Recruit Surveillance, a stratified, cross-sectional study of 1208 randomly selected US Air Force recruits, were used to evaluate treatment planning outcomes for the two provider groups (2 civilian; 7 military providers). Treatment planning outcomes included type of non-invasive, operative, and oral surgery treatment recommended, and orthodontic referrals. Patient demographic variables included age, gender, education, race/ethnicity, and military component ("status"). Data was examined both at the tooth-level and patient-level for statistical significance. For patient level data, multivariate analyses were performed with statistically significant variables included in each final model for patient level data. Data were analyzed with logistic regression and Poisson regression (alpha=0.05). For tooth level data, bivariate logistic regression analyses were performed for tooth-level data. Results: Significant differences were found between military and civilian dentists' treatment planning decisions (p<0.05) for both patient level and tooth level data. Conclusions: Statistically significant differences were found for multiple treatment planning outcomes. While a systematic difference in aggressiveness of treatment plans did not emerge between military and civilian providers, this study does demonstrate that differences in treatment planning outcomes between civilian and military providers exist and warrant further research.

Table 1. Treatment Plan Recommendations Based on Specific Conditions and the Provider Type Most Likely to Recommend Them

Provider Type More Likely to Recommend	Treatment Recommendation	Condition(s)	B	CI	Significant Variables Controlled For
Civilian	Remineralization	Sound tooth	0.664	0.4907 - 0.8381	Race
Civilian	Remineralization	Incipient caries	0.8441	0.6263 - 1.0619	Gender, education, race
Civilian	Remineralization	Caries	0.8118	0.4611 - 1.1625	Education, race
Military	Sealant	Sound tooth	-1.145	-1.322 - -0.968	Gender, status, age
N/A	Sealant	Incipient caries	-0.6502	-3.0507 - 1.7502	None
Military	Sealant	Caries	-1.4753	-1.9138 - -1.0323	Status, race
Civilian	Direct Restorations	3-5 carious posterior surfaces	0.4793	0.0039- 0.9548	Status, race
N/A	Single Crown	3-5 carious posterior surfaces	-1.0613	-2.5105 - 0.3878	Education, race
N/A	Extraction	3rd molar (impacted, sound or unable to be scored)	0.8539	0.5401 - 1.1676	Education, status, race