



Effects of Perceived vs Actual Frequency of Rewards on Orthodontic Patient Attitudes and Compliance

Alan Yee¹, Donna Kritz-Silverstein², Wendy Chu¹, Pramod Sinha¹

¹College of Dental Medicine, Roseman University of Health Sciences

²School of Public Health and School of Medicine, University of California San Diego

INTRODUCTION

- Patient compliance in orthodontics plays a major role in the ultimate success or failure in orthodontic treatment¹. Compliance in a health care setting is defined as the extent to which a person's behavior coincides with medical or health advice². In the orthodontic setting, patient compliance can be measured, in broad terms, by oral hygiene, appointment punctuality, missed or rescheduled appointments, appliance wear, and appliance maintenance³.
- A method of increasing patient compliance is by rewarding the patient through praise or giving small rewards/incentives after doing something right, which is called positive reinforcement⁴. In an orthodontic practice, rewards in the form of coupons or gift cards can be used.
- The relation between positive reinforcement and orthodontic compliance has not been examined thoroughly. Furthermore, the effects of frequency of rewards distribution on patient compliance has never been studied. In addition to the actual frequencies of rewards, another unstudied aspect of compliance is the patients' perceived frequency of rewards. That is, how often a child thinks he or she is rewarded.

OBJECTIVES

This study will investigate the effectiveness of different reward schedules on patient compliance (as represented by oral hygiene assessments), and attitudes towards orthodontic treatment. It will also determine whether actual or perceived reward frequency has a greater effect on compliance and attitudes.

RESEARCH QUESTIONS

1. Do rewards schedules affect attitudes and compliance?
2. Which has a greater effect on patient attitudes, perceptions, and compliance; perceived frequency of rewards or actual frequency of rewards?
3. Is there a correlation between perceived frequency of reward and actual frequency of rewards?

METHODS

RESEARCH DESIGN

- Cross-sectional study with the use of a paper survey for data collection as well as patient charts to obtain information on patient oral hygiene.

VARIABLES

Independent Variables

- Perceived frequency of rewards
- Actual frequency of rewards

Dependent Variables

- Oral hygiene assessment
- Patient attitudes towards reward programs
- Patient attitudes about orthodontic treatment
- Likelihood of making referrals



INCLUSION & EXCLUSION CRITERIA

- Inclusion criteria: 1) Patients in full upper and lower fixed appliances (braces), 2) aged 11 to 18 years, 3) in treatment since July, 2020, 4) must be able to understand English 4) written consent from parent, assent from child
- Exclusion criteria: 1) Patients in retention, 2) wearing clear aligners, 3) or attending emergency appointments



STATISTICAL ANALYSIS

- Patients will be grouped based on perceived frequency (lowest/middle/highest third) and based on actual frequency (lowest/middle/highest third) of rewards.
- Comparisons by perceived frequency and by actual frequency of rewards will be performed with analysis of variance for responses to the attitude questions, and by chi-square analysis for oral hygiene assessments.
- Correlations and regression analyses will examine the associations of actual and perceived rewards with each other and with each of the outcomes.

HYPOTHESES

Null Hypothesis:

- Reward frequency (perceived frequency or actual frequency of rewards) will not affect patient compliance and attitudes for orthodontic treatment

IMPLICATIONS

- Results of this study will indicate whether continuous or intermittent rewards has a greater impact for improving patient compliance and attitudes in orthodontics.
- Moreover, this study will clarify whether patient perception of rewards has a greater effect on patient compliance/attitudes than the rewards themselves.
- Any new strategies to maximize compliance in orthodontics will be extremely beneficial because compliance is critical to the overall success of orthodontic treatment.
- Determining the optimal reward frequency could help orthodontic practices cut unnecessary expenses in its reward programs.

ACKNOWLEDGEMENT

Dr. Glen Roberson(Roseman University of Health Sciences); Dr. Kishore Chaudry (Roseman University of Health Sciences), Dr. Richard Stevens (Roseman University of Health Sciences), Dr. Karthikeyan Subramani (Roseman University of Health Sciences), Dr. Prashanti Bollu (Roseman University of Health Sciences)

REFERENCES

1. Bos A, Hoogstraten J, Prah Andersen B. Towards a comprehensive model for the study of compliance in orthodontics. *Eur J Orthod.* 2005;27(3):296-301.
2. Aljabaa A, McDonald F, Newton JT. A systematic review of randomized controlled trials of interventions to improve adherence among orthodontic patients aged 12 to 18. *Angle Orthod.* 2015;85(2):305-313.
3. Richter D NR, Sinha P, Smith D. Effect of behavior modification on patient compliance in orthodontics.pdf. *The Angle Orthodontist.* 1998;68:10.
4. Kreit LH BC, Delman L. Patient cooperation in orthodontic treatment. *The Journal of the American College of Dentists.* Oct 1968;35:327-332.