AN EVALUATION OF THE EFFECT OF HOUSEHOLD DENTURE CLEANSERS ON TENSILE BOND STRENGTH AND COLOUR STABILITY OF 2 DIFFERENT HEAT POLYMERISED ACRYLIC RESINS –AN INVITRO STUDY

by

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Dissertation Submitted to the
Rajiv Gandhi University of Health Sciences, Karnataka, Bangalore

In partial fulfillment
of the requirements for the degree of

MASTER OF DENTAL SURGERY (M.D.S)

In

PROSTHODONTICS

Under the guidance of
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S.D.M COLLEGE OF DENTAL SCIENCES AND HOSPITAL
DHARWAD

2011

ABSTRACT

BACKGROUND AND OBJECTIVES: Household denture cleansers are commonly used in India since they are easily available on shelf and relatively inexpensive. Unlike commercial denture cleansers, the effect of household denture cleansers on physical properties of heat cure acrylic resin is not well documented. Though the disinfectant effect of bleach and vinegar is well known, there are contradictory findings on the effect of bleach on colour of acrylic resin. Hence this study was undertaken to evaluate the effect of household bleach (1%) and vinegar (50%) on the colour stability and tensile strength of Trevalon and Lucitone 199 heat cure acrylic.

METHOD: 48 Trevalon and Lucitone 199 heat cure acrylic samples each, of dimensions 65×10×2.5 in length, width and thickness were fabricated. 16 samples of each type were then immersed in 1% household bleach, 50% vinegar and water. The samples were alternatively immersed in cleanser and water for 8 hrs for 20 days simulating 30 days of use of cleanser. The samples were then checked for colour changes using a Spectroguide (portable spectrophotometer) and tensile strength was evaluated on Instron universal testing machine. The obtained results were subjected to statistical analysis using student's t- test, 2- way ANOVA and Newman-Keuls multiple post hoc procedure.

RESULTS: Significant colour change was seen in Lucitone 199 heat cure samples on immersion in 1% bleach and 50% vinegar. Insignificant colour change was seen in Trevalon heat cure samples. There was insignificant change in tensile strength of both Trevalon and Lucitone 199 heat cure samples on immersion in 1% bleach and 50% vinegar.

INTERPRETATION AND CONCLUSION: The present findings suggest that bleach affects the colour of acrylic resin. But this effect varies depending upon the acrylic resin. Bleach can be used to remove stains from denture surface. Vinegar can be used to remove heavy deposits from the denture surface. But their use should be limited because of their effect on colour.

KEY WORDS: Bleach, vinegar, Trevalon heat cure acrylic resin, Lucitone 199 heat cure acrylic resin.