Introduction

Elastomers are the most commonly used impression materials in dentistry. Within this group, polyethers and polyvinylsiloxanes exhibit excellent dimensional stability against various storage conditions (Sinobad, et al., 2014). The impression material selected should present dimensional stability and accuracy in the reproduction of details after disinfection or sterilization, allowing their storage for a long period of time (Nassar, Oko, Adeeb, El-Rich & Flores, 2013; Sinobad, et al., 2014).

Some microorganisms that develop in the oral cavity may cause incurable infectious diseases such as those responsible for hepatitis C or human immunodeficiency virus (HIV) (Gelson, Zanarotti, Fonseca, & Santos Cruz, 1999). Some microorganisms may cause incurable infectious diseases such as those responsible for hepatitis C or human immunodeficiency virus (HIV) (Gelson, Zanarotti, Fonseca, & Santos Cruz, 1999). These microorganisms may reach the oral cavity due to the presence of microorganisms in the oral cavity and oral health conditions (Kumar, Reddy, Karthigeyan, Punithavathy, Karthik, & Manikandan, 2012). The prevalence of these diseases and their potentially harmful effects suggest a mandatory adherence to infection control procedures by dental laboratories and offices (Kumar, et al., 2014).

The ISO 4823:2000 norm establishes the requirements that the elastomers must meet, and according to it, the maximum linear dimensional change should correspond to 1.5%.

Materials and Methods

To evaluate the dimensional changes of the addition silicone Imprint 4 Pentaputty (3MESPE®, Seefeld, Germany) and polyether Impregum Penta (3MESPE®, Seefeld, Germany) after disinfection or sterilization after a 6-month storage period of the samples.

Hypothesis

Alternative hypothesis

There is dimensional change in the addition silicone Impregum 4 Pentaputty (3MESPE®, Seefeld, Germany) and polyether Impregum Penta (3MESPE®, Seefeld, Germany) after disinfection or sterilization after a 6-month storage period of the samples.

Null Hypothesis

There is no change in the dimensional stability of the addition silicone Impregum 4 Pentaputty (3MESPE®, Seefeld, Germany) and polyether Impregum Penta (3MESPE®, Seefeld, Germany) after disinfection or sterilization after a 6-month storage period of the samples.

Results

In the addition silicone, in both T0 and T6 months, the group that showed the lowest dimensional change was the control group, followed by the hypochlorite and autoclave groups. In the polyether and addition silicone, in the long term, have dimensional changes when subjected to disinfection or sterilization.

Conclusion

The null hypothesis is rejected. The polyether and addition silicone, in the long term, have dimensional changes when subjected to disinfection or sterilization.

Clinical Implications

The dimensional stability of impression materials subjected to disinfection, sterilization, and long storage periods are critical to the success of the final prosthetic restoration. The impressions can be used after 6 months of storage because there is no clinically significant dimensional change.