



## DAFTAR ISI

|                                                                          | Halaman |
|--------------------------------------------------------------------------|---------|
| HALAMAN JUDUL .....                                                      | i       |
| HALAMAN PENGESAHAN .....                                                 | ii      |
| PERNYATAAN BEBAS PLAGIASI .....                                          | iv      |
| KATA PENGANTAR .....                                                     | vi      |
| DAFTAR ISI .....                                                         | ix      |
| DAFTAR GAMBAR .....                                                      | xi      |
| DAFTAR TABEL .....                                                       | xii     |
| DAFTAR LAMPIRAN .....                                                    | xiii    |
| DAFTAR ISTILAH .....                                                     | xiv     |
| INTISARI .....                                                           | xv      |
| <i>ABSTRACT</i> .....                                                    | xvi     |
| <br>                                                                     |         |
| BAB I. PENDAHULUAN .....                                                 | 1       |
| A. Latar Belakang .....                                                  | 1       |
| B. Perumusan Masalah .....                                               | 6       |
| C. Tujuan Penelitian .....                                               | 6       |
| D. Manfaat Penelitian .....                                              | 6       |
| E. Keaslian Penelitian .....                                             | 7       |
| <br>                                                                     |         |
| BAB II. TINJAUAN PUSTAKA .....                                           | 9       |
| A. Telaah Pustaka .....                                                  | 9       |
| 1. Perawatan Saluran Akar .....                                          | 9       |
| 2. Instrumen Endodontik NiTi .....                                       | 10      |
| 3. Desain Geometri <i>File</i> Endodontik .....                          | 14      |
| 4. <i>Single-File</i> Endodontik NiTi .....                              | 23      |
| 5. <i>File</i> Endodontik Kontinu NiTi <i>OneCurve (MicroMega)</i> ..... | 24      |
| 6. Kelelahan Siklik Pada Instrumen Endodontik NiTi Kontinu .....         | 25      |
| 7. <i>In Silico</i> .....                                                | 27      |
| 8. <i>Micro-computed Tomography (Micro-CT)</i> .....                     | 27      |
| 9. <i>Computer-aided Design</i> .....                                    | 28      |
| 10. Analisis Elemen Hingga ( <i>Finite Element Analysis</i> ) .....      | 29      |
| B. Landasan Teori .....                                                  | 32      |
| C. Hipotesis .....                                                       | 34      |
| <br>                                                                     |         |
| BAB III. METODE PENELITIAN .....                                         | 35      |
| A. Jenis Penelitian .....                                                | 35      |
| B. Identifikasi Variabel .....                                           | 34      |
| C. Definisi Operasional .....                                            | 37      |
| D. Subjek Penelitian .....                                               | 37      |
| E. Alat Penelitian .....                                                 | 38      |
| F. Tempat dan Waktu Penelitian .....                                     | 40      |
| G. Tahapan Penelitian .....                                              | 40      |
| H. Analisis Data .....                                                   | 46      |



|                                               |    |
|-----------------------------------------------|----|
| I. Alur Penelitian .....                      | 48 |
| BAB IV. HASIL PENELITIAN DAN PEMBAHASAN ..... | 49 |
| A. Hasil Penelitian .....                     | 49 |
| B. Pembahasan .....                           | 53 |
| BAB V. KESIMPULAN DAN SARAN .....             | 57 |
| A. Kesimpulan .....                           | 57 |
| B. Saran .....                                | 57 |
| DAFTAR PUSTAKA .....                          | 58 |
| LAMPIRAN .....                                | 65 |