INTISARI

Penurunan kapasitas *buffer* saliva merupakan kondisi yang sering dijumpai pada lansia akibat proses penuaan fisiologis, penurunan fungsi kelenjar saliva, dan penggunaan medikasi jangka panjang. Rendahnya kapasitas *buffer* saliva dapat meningkatkan risiko karies, lesi mukosa, dan gangguan keseimbangan pH rongga mulut. Senam wajah telah terbukti dalam penelitian terdahulu mampu meningkatkan aliran saliva melalui stimulasi otot-otot wajah. Namun, kelemahan tonus otot dan penurunan kekuatan motorik pada lansia dapat menyebabkan pelaksanaan gerakan senam wajah menjadi kurang optimal. *Cryotherapy* merupakan terapi non-farmakologis dengan pemanfaatan suhu dingin. Oleh karena itu, diharapkan dapat menjadi alternatif karena memberikan rangsangan motorik serta dingin pada glandula saliva.

Penelitian ini bertujuan mengetahui pengaruh senam wajah dan *cryotherapy* terhadap kapasitas *buffer* saliva pada lansia di Panti Tresna Werdha Pakem menggunakan desain *cross-over*. Sebanyak 24 subjek menerima kedua intervensi masing-masing selama 7 hari dengan jeda periode *washout*. Pengukuran kapasitas *buffer* saliva dilakukan pada tiga waktu: *pre-test* hari ke-1, *pre-test* hari ke-7, dan *post-test* hari ke-7 menggunakan *GC Buffer Strip*. Analisis data meliputi uji normalitas *Shapiro-Wilk*, uji homogenitas *Levene's*, uji *paired T-test* untuk melihat pengaruh sebelum dan setelah intervensi, serta uji *independent T-test* untuk membandingkan peningkatan antar-intervensi.

Hasil penelitian menunjukkan bahwa senam wajah maupun *cryotherapy* secara signifikan meningkatkan kapasitas *buffer* saliva pada lansia ($p<0,05$). Namun, perbandingan peningkatan antara kedua intervensi menunjukkan tidak terdapat perbedaan yang signifikan ($p>0,05$). Dengan demikian, kedua intervensi terbukti dapat meningkatkan kapasitas *buffer* saliva dan dapat dipilih sesuai kenyamanan serta kebutuhan lansia.

Kata Kunci: *Cryotherapy*, Kapasitas *buffer*, Lansia, Saliva, Senam wajah

ABSTRACT

A decline in salivary buffer capacity is commonly observed among older adults due to physiological aging, reduced salivary gland function, and long-term medication use. Low buffer capacity increases the risk of dental caries, mucosal lesions, and disturbances in oral pH homeostasis. Facial exercises have been demonstrated in previous studies to enhance salivary flow through stimulation of facial muscle activity. However, decreased muscle tone and diminished motor strength in older adults may limit the optimal execution of these exercises. Cryotherapy is a non-pharmacological intervention utilizing cold temperature and is expected to provide motor and cold stimulation to the salivary glands.

This study was conducted to determine the effects of facial exercises and cryotherapy on salivary buffer capacity among older adults at Panti Tresna Werdha Pakem using a crossover design. A total of 24 participants underwent both interventions for seven days each, separated by a washout period. Salivary buffer capacity was measured at three time points: pre-test day 1, pre-test day 7, and post-test day 7 using GC Buffer Strip. Data analysis included the Shapiro-Wilk normality test, Levene's test for homogeneity, paired T-test to evaluate pre- and post-intervention changes, and the independent T-test to compare improvements between interventions.

The result showed that both facial exercises and cryotherapy significantly increased salivary buffer capacity ($p<0,05$). However, no significant difference was found between the magnitudes of improvement produced by the two interventions ($p>0,05$). These findings indicate that facial exercise and cryotherapy are proven in enhancing salivary buffer capacity and may be selected based on individual preference and comfort.

Keywords: Buffers, Cryotherapy, Aged, Exercise therapy, Saliva