These findings coincide with the AFM findings of Dorranian et al, confirming that plasma treatment degrades the surface irregularities to bear polar groups and removes the materials with less attachment energy to the surface; i.e physical sputtering [24].

This change in surface morphology is assumed to be caused primarily by the surface being bombarded by high-energy ions present in the plasma. It indicates that plasma treatment improved the cross-linking phenomenon [25].

The test settings may not represent the clinical scenario because the specimens designed for the study contained several adhesive surfaces, yet in clinical cases, dentures have only one adhesive surface. Thus, in vivo investigations should also be carried out. Meanwhile, the results of this study may serve as a baseline for future research into novel materials and other variables affecting bond strength.

CONCLUSIONS

Within the limits of this study, it was concluded that 5-minutes oxygen + argon plasma treatment was effective in increasing the shear bond strength of heat cure soft liner material to CAD-CAM acrylic, without impairing chemical structure and microhardness of CAD-CAM acrylic material.

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