RESULTS:

Variable	Material	Bleaching Agent	Colorimetric reading (E)
Before Bleaching	Fusion Flo		2.1
	Filtek		2.0
After bleaching	Fusion Flo	Polaoffice	1.9
		Florence	2.0
	Filtek	Polaoffice	2.0
		Florence	2.0
After staining	Fusion Flo		3.4
	Filtek		3.2
After second bleaching	Fusion Flo	Polaoffice	2.3
		Florence	2.7
	Filtek	Polaoffice	2.1
		Florence	2.5

After initial bleaching, the specimen showed little changes in colour and shade. The Polaoffice subgroups showed improvement in their shade while the change in the Florence sub groups was not significant.

The colour difference after the second bleaching session from baseline was higher in the Polaoffice subgroups than the Florence subgroups. The Florence subgroups still showed traces of coffee stains after the second bleaching session, visible on both the composite brands.

From the above results, it can be concluded that none of the bleaching systems notably changed the color of any of the composites prior to staining.No significant difference was found between the two composites, confirming that freshly prepared composites are color stable.The readings obtained after the second bleaching procedure show that Polaoffice has a better whitening effect than Fluorescence, in terms of their bleaching capacity.

DISCUSSION:

The bleaching products adopted in the current study namely Polaoffice and Florence are Hydrogen Peroxide bleaching agents. These bleaching systems solely depend on chemical activation and required no light activation.

The results of the present study are in agreement with the findings of a recently published study[14]. More specifically, they revealed that none of the bleaching systems notably changed the color of any of the composites tested after the initial bleaching session. Also no significant difference was found between the two composites. This confirms that freshly prepared composites are color stable. Comparing the current results to those obtained in the studies, it is concluded that composites do not bleach to the same degree as teeth. Therefore replacement of such restorations may be a more effective option.

The second treatment to which the composites were subjected was a staining procedure which reflects the conditions of the oral environment, in which restorations are exposed to coffee drinks. Coffee was chosen in this study as a staining solution because it has shown to have a strong staining effect on composites as well as on natural teeth. According to Um and Ruyter[15], discoloration by coffee occurs both by adsorption and absorption of colorants by resin based restorative materials. The authors explained that this was maybe due to the compatibility of the polymer phase of the resinous materials with the yellow colorant of the coffee which served to facilitate this adsorption and penetration of colourants.

In both brands tested, whitening of the stained specimens was greater with Polaoffice than Florence. This may suggest that Polaoffice may have a better chemical activation than Florence, and a better whitening effect on stained composite. Generally, the mechanism of color change in resin composite when exposed to vital bleaching regimes includes oxidation of surface pigments, oxidation of amine compounds, or breakdown of poorly polymerized resin matrix. Therefore it may be concluded that Polaoffice has a better whitening effect than Florence, in terms of their bleaching capacity.

CONCLUSIONS:

- In office bleaching may remove surface stains from composite restorations but it will not whiten unstained ones
- Polaoffice has a better whitening effect than Florence, in terms of their bleaching capacity.

REFERENCES:

1. Kugel G, Kastali S. Tooth whitening efficacy and safety; a randomized and controlled clinical trial. Compend Contin Educ Dent 2000;29:516-521
2. Dahl JE. Tooth bleaching – a critical review of the biological aspects. Critic Rev Oral Bio Med. 2003;14:292-304
3. Haywood VB, Heymann HO. Nightguard Vital Bleaching. Quint Int. 1989;20:173-176
4. Greenwall L. Bleaching techniques in restorative dentistry, an illustrated guide. Martin Duntz Ltdl United Kingdom; 2001
5. Schulze Ka, Marshall SJ, Gansky SA, Marshall GW. Color stability and hardness in dental composites after accelerated aging. Dent Mater 2003;19:612-619
6. Janda R, Roulet JF, Kaminsky M, Steffin G, Latta M. Color Stability of resin matrix restorative materials as a function of methods on light activation. Eur J Oral Sci.2004;112:280-285
7. Ertas E, Guler AU, Yucel AC, Guler E. Color stability of resin composite after immersion in different drinks. Dent Mater J. 2006;25:371-376
8. Bagheri R, Burrow MF, Tyas M. Influence of food stimulating solutions amd surface finish on susceptibility to staining of esthetic restorative materials. J Dent. 2005;33:389-398
9. Fujita M. Kawakimi S, Noda M, Sano H. Color changes of newly developed esthetic restorative material immersed in food stimulatin liquid. Dent Mater J. 2006;25:352-359
10. Yalcin F, Gurgan S. Effect of two bleaching regimens on the gloss of tooth coloured restorations. Dent Mater 2005;21:464-468
12. Monoghan p, Trowbridge T, Lautenschlager E. Composite resin color change after vital tooth bleaching. J Prosthet Dent. 1992;67:778-781
13. Yu H, Pan X, Lin Y, Li Q, Hussain M, Wang Y. Effects of carbamide peroxide on the staining susceptibility of tooth coloured restorative materials. Oper Dent. 2009;43:72-82
14. Abu Bakr N, Han l, Okamoto A, Iwaka M. Color Stability of copomer after immersion in various media. J Esthet Dent. 2000;12:258-263
15. Um CM, Ruyter IE. Staining of resin based veneering materials with coffee and tea. Quint Int 1991;22:377-386.