

UNIVERSITI TEKNOLOGI MARA

**COMPARISON BETWEEN
MICROSCRIBE-3DXL SYSTEM
WITH RADIOGRAPHIC
CEPHALOMETRIC SYSTEM ON
MALAYSIAN MALAY NORMS**

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ABSTRACT

Conventionally cephalometric analysis involves radiographic exposure; researchers have studied several alternative methods to avoid the radiation hazards, one of the promising ideas is MicroScribe-3DXL. The objective of this study is to investigate the probability of using the MicroScribe-3DXL system as an alternative method of the cephalometric radiographic. Nine landmarks were chosen (Facial angle, ANB, Maxillary depth, U1/FH, FMA, IMPA, FMIA, A-Na-Perp, and Pog-Np), to compare the reliability and the validity of MicroScribe-3DXL with the conventional cephalometric radiographs. The sample was 60 Malay subjects selected under specific criteria with normal occlusion (30 males and 30 females). Two standard images were taken for each subject; one by the conventional cephalometric radiograph and one by the MicroScribe-3DXL. After tracing each image, a comparison were conducted between the results of the two methods, paired t-test was conducted and p value was set at $p < 0.05$. The results showed statically a significant difference in five measurements (U1/FH, FMA, IMPA, FMIA and Pog-Np). The difference in the measurements (FMA, IMPA, FMIA and Pog-Np) considered accepted clinically. While U1/FH measurement showed clinically significant difference. The overall reliability of MicroScribe-3DXL was 92.7%; its validity was 91.8%. This study has introduced the MicroScribe-3DXL as a promising device to assist in diverse areas in dentistry. Especially in Orthodontics, in order to improve diagnosing and treatment planning. The conclusion is MicroScribe-3DXL is reliable and valid to most of cephalometric landmarks investigated in this study to a certain limit. Using MicroScribe-3DXL saves time and reduce the cost.

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