Purpose: To compare the Collimator scatter factor (Sc), Phantom scatter factor (Sp) and Total scatter factors (Sc,p) of 6MV flattened Beam (6MV FB) and 7MV Unflattened beams (7MV UFB).

Methods: The flattening filter and primary collimator are the major sources of producing the scattered radiation. In this study, the field sizes from 5 x 5 cm² to 40 x 40 cm² compared for 6MV FB and 7MV UFB. We measured Sc,p with CC 13 chamber at the depth of 10 g/cm² using IBA blue phantom and Sc measured with CC 13 chamber at the depth of 10 g/cm² using columnar phantom (TG 74) for 6MV FB and 7MV UFB x-ray beams from a Siemens - ARTISTE linear accelerator. The Sp values derived from the Sc,p and Sc Values.

Results: All the values of Sc,p, Sc and Sp are normalized to 10 x 10 cm² field size the measured values of Sc,p for 6MV FB and 7MV UFB varies from 0.9437 to 1.0651 and 0.9690 to 1.0283 respectively. The Sc values for 6MV FB and 7MV UFB varies from 0.9676 to 1.0212 and 0.9882 to 1.0075 respectively. The Sp values for 6MV FB and 7MV UFB varies from 0.9752 to 1.0429 and 0.9806 to 1.0206 respectively. Our study results shows that Sc, Sp & Sc,p for 7MV UFB for smaller fields up to 10 x 10 cm² were higher than 6MV FB and for larger fields greater than 10 x10 cm² it is vice versa.

Conclusions: A scatter factors are measured and compared for 6MV FB and 7MV UFB. A significant variation observed for Sc, Sp and Sc,p values of 6MV FB and 7MV UFB. This is may be due to flattening filter and beam quality.