Wrestling is a dynamic and highly demanding sport. Core stability is predominantly maintained by dynamic function of muscular elements, which act as a bridge between upper limbs and lower limbs to transfer force and maintaining lumbo-pelvic stability. Decreased core stability was reported to be associated with higher risk of low back injuries. This study aims to validate a static and dynamic core stability value of Indian woman wrestlers and to establish a correlation between stability score and low back pain. Twenty-eight Indian women national camper wrestlers participated in the study. They were subjected to tests of core stability, which included static core stability tests (Bliss test protocol) and dynamic core stability tests (isoinertial tests). Mean values are established and compared with international standardised values and endurance ratios. Low back pain was evaluated by Oswestry low back pain disability questionnaire and severity graded by Japanese Orthopedics Association back pain evaluation questionnaire. The results are correlated to identify the relationship with low back pain. This pilot comparative study shows significant disparity between flexor and extensor score in comparison with international standards. The p value is <0.05 and predict a direct correlation to biomechanical error of lumbo-pelvic segment.