Aim: To clarify the optimal Transcutaneous Electrical Nerve Stimulation (TENS) frequency in managing pain and functional deficiency and the efficacy of low frequency (LF) and high frequency (HF) - TENS on pain and functional status in patients with knee osteoarthritis (OA). Material and Method: Ninety-three female patients with symptomatic knee OA were enrolled in this study. All the patients were randomly divided sham or LF or HF-TENS groups with five sessions/week of physical therapy as 20 minutes hot pack, 5 minutes therapeutic ultrasonography, and exercise program. Pain on the Visual Analog Scale (VAS) in rest and motion, durations of walk, climbing up and down stairs and pain, stiffness, function and total scores of Western Ontario and McMaster Universities osteoarthritis index (WOMAC) were assessed at baseline, after therapy and 4 weeks after the therapy. Results: The VAS pain in rest and motion were found to be significantly different for each therapy group within the three visits ($p<0.001$). Walk duration was found to be significantly decreased in the last visit compared to those in first and second visits of LF and HF-TENS groups ($p<0.05$). The scores of the WOMAC pain, stiffness, function and total were found to decrease significantly in the second visit of each therapy group compared to those in the first and last visits ($p<0.05$). Discussion: Regardless of frequency, TENS improves pain, functional status and walking in patients with knee OA. The investigators should prefer objective markers than subjective measurements in evaluating clinical status and pain in knee OA.