Introduction
Fewer studies in the literature have examined the role of post-operative physical therapy (PT) after lumbar fusion. In the post-operative setting, much of the rehabilitation literature focuses on post-discectomy patients. The study aims to evaluate and compare the changes in pain and functional scores between patients who completed PT versus no-PT after their anterior or posterior/posterolateral 1-2 level lumbar fusions for degenerative lumbar instability.

Methods
We assembled a clinical database of patients with PT and no-PT visits post anterior or posterior/posterolateral 1 or 2 levels lumbar fusion surgery for degenerative disease from June 1st, 2014-April 30th 2016. Basic demographic and outcome scores such as Oswestry disability index (ODI) and Visual analog scale (VAS) were collected. Independent two-sample with unequal variances were used to assess for differences between the two groups (a=0.05).

Results
72 and 51 patients in PT and no-PT met the inclusion criteria, respectively. There were higher numbers of females (63.8%) in PT group. No-PT group had similar numbers of males and females. Mean ages for PT and no-PT groups were 61.4(±14.7) and 59.5(±14.1) years, respectively. Both groups were similar with respective to body mass index. Majority of the cases in both groups involved posterior/posterolateral approach. 55.5% of patients in PT group and 50.9% in no-PT had 1 level lumbar fusion. Mean change (pre-operative vs. 1 year post-operative) in ODI between the two groups differed significantly (PT vs. no-PT: 18.8±13.9 and 9.3±17.5; p=0.019). Similarly, mean change in VAS was significantly different between the two groups (PT vs. no-PT: 3.2±2.18 and 1.05±2.08; p=0.026). None of our PT patients reported any change in pre vs. 1 year post-operative follow up employment status (35% retired, 38% employed fulltime, 11% unemployed and 16% homemaker). 98% of No-PT patients reported no change in employment status during the same timeframe (46% retired, 25% employed fulltime, 13% unemployed and 15% homemaker).

Conclusions
PT group reported significantly