

**Michael Dubic, Gregory Benes, Justin David  
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**LSU Health Sciences Center, New Orleans, LA**

Dr. Vinod Dasa, Dr. Claudia Leonardi, Dr. Amy Bronstone  
LSUHSC, Department of Orthopaedics

**“Factors affecting Out Patient Physical therapy attendance following Total Knee Arthroplasty”**

**ABSTRACT:** Total knee arthroplasty is one of the main options for treatment for patients suffering severe knee pain and limitation. Post-op physical therapy (PT) is universally recommended and it has been associated with improved function. The goal of this study was to identify what patient factors (age, body mass index, home address, insurance type, marital status, highest level of education, and driving distance to clinic) were associated with engagement in and completion of a full course of PT defined as  $\geq 2$  sessions attended for engagement and  $\geq 16$  sessions attended for completion. PT session notes for 259 patients who had undergone TKA between January of 2016 through December of 2019 were reviewed for this study. Patients averaged 69 years old, were 68.7% (n = 178) female, 36.7% (n = 95) identified as of black race, 57.9% (n = 150) identified as of white race and 5.4% (n = 14) identifying as of another race. The majority of patients had BMI greater than 25 kg/m<sup>2</sup> (92.3%, n = 239), received education beyond high school (55.4%, n = 128) and lived with a partner (51.6%, n = 131). 35.9% (n = 93) of patients had private insurance, 23.9% (n = 62) had Medicare, 36.3% (n = 94) had Medicare advantage and 3.9% (n = 10) had Medicaid. Analysis showed that increasing distance to clinic negatively impacted engagement with PT (p= 0.008). This association was not seen when analyzing PT completion. In multivariable analysis, only race was significantly associated with PT completion (p=0.024). White patients (81.3%) were more likely to complete PT when compared to black (65.3%) or other (61.5%) patients. These findings suggest that proper PT clinic referral pre-operatively or immediately post-operatively before the first PT session may be an important predictor of creating patient engagement, however it is not a significant predictor for completion of PT regime. Further analysis into specific social-demographic factors pertaining to race need to be conducted to accurately interpret the decreased adherence to completion of PT post TKA observed between white and black patients.

Special Instructions: The abstract is a summary of the project. Do not to exceed one page. Do not change margins, font style or font sizes on this page.

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## Materials and methods

Physical therapy (PT) records from 324 patients who had undergone total knee arthroplasty (TKA) performed by Dr. Vinod Dasa at Oschner Kenner Hospital between January of 2016 through December of 2019 were selected for this study. PT records pertaining to rehabilitation for TKA were reviewed through access to Oschner Epic EHR. Patient demographic data including age, home address, insurance type, marital status, and highest level of education attained were analyzed in comparison to the number of PT sessions completed by patients. The number of appointments completed by each patient was determined by reviewing signed PT notes for each encounter in clinic. Distance to clinic was calculated in kilometers using the shortest route from the patient's home address to the clinic on Google Maps.

Most patients completed their PT appointments at the outpatient PT center affiliated with the Oschner Kenner hospital in which their original surgery was performed. For patients that had no recorded PT in Epic at this clinic, a second search was performed using Allscript EHR where information about surgery and office visit notes from Dr. Dasa were stored. This allowed us to review any outside PT that may have been conducted as those orders have to be approved by the treating surgeon and documented in their charts. For those patients who performed PT outside the Oschner Kenner clinic, their distance from home to clinic was not calculated.

The number of PT appointments attended and the duration of time over which these appointments took place were analyzed with the demographic factors described previously to search for correlations with compliance to PT post-TKA. Standard PT protocols for post-TKA were defined as 16 appointments carried out over 7 weeks. Starting day 1 post-op, patients were encouraged to attend 3 PT sessions per week for the first 3 weeks, with a reduction to 2 appointments per week afterwards. Patients were stratified into categories of compliance based on number of sessions attended. **I don't remember how we stratified patient attendance for analysis**