

# Functional outcome of THA in terms of Harris Hip Score

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## Abstract

**Objective:** The aim of this study was to compare the functional outcome of preoperative and 01 year follow up visit of THA in terms of Harris Hip Scoring.

**Methodology:** This prospective study was carried out at the Department of Orthopedic and Spine Surgery HMC from January 2020 to January 2021. A total of 60 patients were included in the study and there preoperative and 01 year follow up Harris hip score was calculated and compared.

**Results:** A total of 60 patients with male 29 and female 31 were included. The preoperative HHS ranged from 25 to 64 with mean 45.96% while the 01 year follow up visit HHS ranged from 67 to 92 with a mean 82.46% showing significance improvement in functional outcome.

**Conclusion:** Total Hip Arthroplasty is a safe and effective procedure that relieves pain and leads to improvement in quality of life in patients with end stage arthritis.

**Keywords:** THA, Harris Hip score, Arthritis

## Introduction

Total hip arthroplasty is the most rewarding procedure in recent reconstructive orthopaedics<sup>1</sup>. The favorable outcome of THA is its ability to alleviate pain caused by end stage hip arthritis sustaining the mobility and stability of hip joint<sup>1,2,8,9</sup>. In elderly population with advancing age there is more wear and tear in joints with more than 40% having degeneration in hip joint.<sup>3</sup> with the increasing life expectancy and aging there is more inclination towards THA.<sup>4</sup> Moreover the Total hip arthroplasty is the gold standard procedure for arthritic hips.<sup>5</sup>

Along with other diseases, the hip disorders are also on inclination trend. The various diseases that destroy the hip joints causing arthritis are either primary or secondary.<sup>1</sup>The primary is the degenerative arthritis in majority of the cases while secondary arthritis is because of either post trauma or infection sequel, AVN, DDH, Rheumatoid, or other inflammatory causes or trauma like neck of femur fracture.<sup>1,6</sup>

There are two treatment modalities one is conservative and second one is surgical. The conservative option includes weight loss, exercise, walking aids use, analgesics, and intraarticular steroid injections. The surgical option is total hip replacement<sup>5,1</sup>.

Total Hip Arthroplasty is performed to relieve pain and improve function in patients.<sup>10</sup> The improvement in pain and function is measured with various scoring systems, one of whom is Harris Hip Score (HHS). The HHS is measured pre and post operatively.<sup>6,7,8,9,10</sup>

The Harris Hip Score (HHS) is developed by Dr William Haris in 1969. It's one of the earliest and reliable scoring system and is a little bit modified<sup>3,11,12</sup>. The Harris Hip Score is Maximum 100. It is calculated by dividing into various portions having scores including Pain domain having Pain Severity, its effect on daily activities and need for medications, functional domain assessing daily activities and gait, Deformity domain assessing flexion, extension, rotation and length, range of motions, putting shoes and socks<sup>1,3,7,13</sup>. The HHS is to evaluate the patients everyday life experience and the effects of the treatment on his daily life activities from his own perspective<sup>11,14</sup>.

## MATERIALS AND METHODS

This prospective study was performed in Orthopaedic and Spine surgery department HMC from January 2020 to January 2021. A total of 60 patients of either sex with the age range from 25 to 75 years were included in the study. Patients with Hip Arthritis, Femoral AVN Head were included in the study. Patients with active infection and prior surgical intervention were excluded from the study. All patients were informed about the purpose and aim of

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the study following which both verbal and written informed consent was taken.

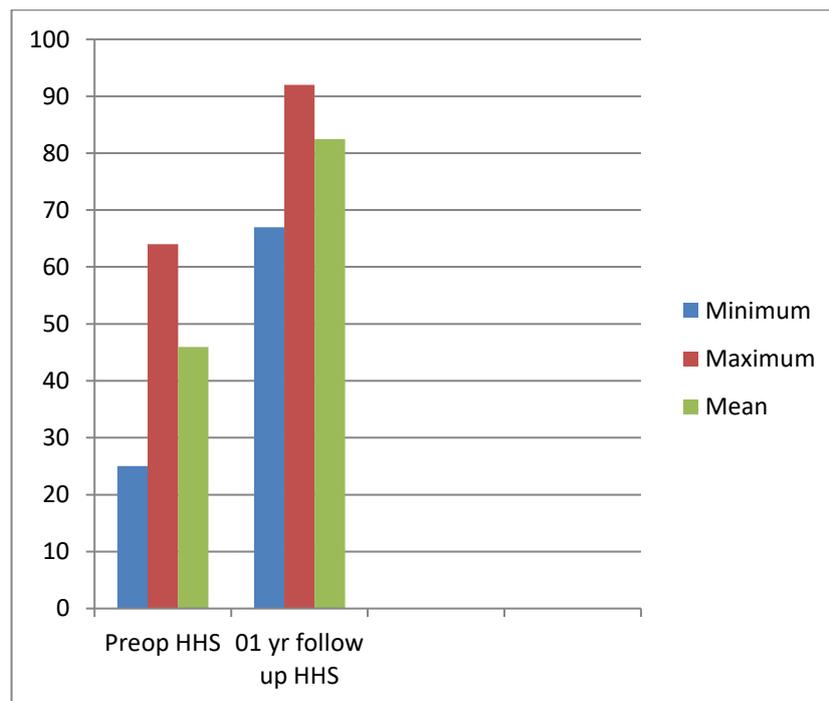
The Harris Hip Score was calculated before surgery and later on the patients were followed and Harris Hip Score was again calculated at 01 year follow up visit. Both the preoperative and follow up visit at 01-year HHS was compared. All statistics were performed using SPSS 20. Continuous variables were expressed as mean± standard deviation. Categorical variables were expressed as frequencies.

## RESULTS

The total number of patients in our study was 60. The mean age of our study participants were  $52.95 \pm 12.4$  years (Range 25 to 75 years). Male patients were 29 (48.33%) and female patients were 31 ( 51.66 %). (Table 01) The preoperative Harris Hip Score ranged from 25 to 64 with a mean of 45.96 %. The follow up visit at 01 year the Harris Hip Score improved to 82.46 with a minimum 67 and maximum 92. (Chart 01)

**Table 01**

Gender	Frequency	Percent
Male	29	48.33 %
Female	31	51.66 %
Total	60	100 %



**Chart: 01**

## Discussion

Total hip Arthroplasty is the most successful reconstructive procedure nowadays in modern orthopedics<sup>1</sup>. The success of THA lies in eliminating the pain caused by the diseased hip joint while maintaining the stability and mobility of the hip joint<sup>1,7,15</sup>. The quality of life after THA is almost comparable to normal

healthy people. Those patients who are treated by THA perform physically better than untreated patients with advanced hip arthritis and the level of satisfaction post surgery is high<sup>12</sup>. The various causes that lead to hip joint destruction are primary osteoarthritis or secondary arthritis due to AVN, inflammatory conditions, DDH, post-traumatic sequelae<sup>11,12</sup>.

The THA is indicated when pain does not improve in spite of taking NSAIDs and lifestyle modification. Various scoring systems are developed to assess the functional outcome of THA among which one is the HHS, which is most easy, reproducible and commonly used<sup>7</sup>.

In our study we compared the HHS calculated preoperatively and at 01 year follow up visit for knowing the functional improvement of THA.

In our study the preoperative HHS ranges from 25 to 64 with a mean as 45.96 while the same patients improved HHS calculated at their 01 year follow up visit ranges from 67 to 92 with mean as 82.46. A study by Suman et al<sup>1</sup> showed pre-operative HHS ranges from 25 to 59 with a mean of 45.5 while the same patients improved HHS calculated at their 01 year follow up visit ranges from 77 to 97 with mean as 91.5. similar comparable results were shown in a study by Toshiyuki et al<sup>8</sup>. There study showed pre-operative HHS range from 29 to 95 with a mean of 55.6 while the same patient improved HHS calculated at their 01 year follow up visit ranged from 73 to 100 with a mean of 94. In Vincent et al<sup>11</sup> study the improved HHS calculated at their 01 year follow up having mean as 89. Gupta et al<sup>16</sup> in their study showed pre-operative HHS with an average of 28 and the same patient improved HHS average at 01 year follow up visit was 90. In comparison to the study by Ganesan et al<sup>17</sup> there study showed average pre-operative HHS as 44 while the same patients improved average HHS at 01 year follow up visit was 88. All these studies showed a remarkable similarity to our study in terms of pre and post-operative Harris Hip Scoring at their 01 year follow-up.

**Conclusion:** Total Hip Arthroplasty is a safe and effective procedure that relieves pain and leads to improvement in quality of life in patients with end stage arthritis as compared to the patient that did not underwent THA. There was a lot of improvement in HHS scores post-operatively denoting active quality of life.

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