

Readability of Total Joint Arthroplasty Patient Education Materials Provided in Spanish

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INTRODUCTION:

Online educational materials are an essential source of information for patients interested in learning more about total joint arthroplasty (TJA). As the Hispanic patient population in the United States continues to grow, ensuring appropriate readability of Spanish patient educational material remains essential. However, previous analyses have suggested that online information related to orthopaedics is presented in Spanish above appropriate reading levels. Therefore, our study aimed to assess the readability of online resources related to TJA procedures to evaluate whether readability has improved.

METHODS:

The search engines Google and Bing were queried for online educational articles related to total hip arthroplasty (THA) and total knee arthroplasty (TKA). The terms “reemplazo de cadera” and “reemplazo de rodilla” were utilized to identify THA and TKA, respectively. Per previous methodology, the first 15 results were used to gather parent articles, with additional articles included if they were accessible within one 1-click of the parent source. Only articles about TJA were included. Two validated measures of readability, the Índice Flesch-Szigriszt (INFLEZ) and Fernandez-Huerta scales, were used to analyze educational material. Higher scores on these scales correlate to greater readability.

RESULTS: A total of 111 articles from 30 online sources were gathered and assessed (**Table 1**). The mean (\pm standard deviation (SD)) INFLEZ and Fernandez-Huerta scores were 56.97 (5.95) and 61.56 (5.87), respectively. The highest scores for both scales were demonstrated for articles provided by MedlinePlus (61.78 (6.77) and 66.25 (6.78), respectively). The lowest scores were seen for articles provided by the American Academy of Orthopaedic Surgeons (AAOS) (53.38 (4.66) and 58.14 (4.61), respectively).

DISCUSSION AND CONCLUSION: We found that for Spanish patient educational materials related to TJA, average INFLEZ scores equate to a 10-12th grade reading level, while Fernandez-Huerta scores correspond to an 8-9th grade reading level. Given that the American Medical Association (AMA) recommends that educational materials should be written below the 6th-grade reading level, our findings encourage interventions to improve the readability and accessibility of TJA information for Spanish-speaking populations. Notably, information provided by the AAOS in Spanish should aim to meet recommendations from the AMA in order to ensure adequate patient education regardless of reading or health literacy levels.

Table 1. Summary of Article Characteristics.

Source	Number of articles	Mean sentence length (SD)	Average word count (SD)	Average syllable count (SD)	INFLEZ Score (SD)	Fernandez-Huerta Score (SD)
MedlinePlus	23	12.20 (2.78)	635 (365)	1346 (776)	61.78 (6.77)	66.25 (6.78)
Operanme	13	18.86 (4.67)	1085 (501)	2325 (1096)	55.17 (3.93)	59.70 (4.02)
AAOS	10	16.02 (2.82)	1788 (1093)	3931 (2387)	53.38 (4.66)	58.14 (4.61)
Mayo Clinic	9	17.55 (3.05)	598 (476)	1307 (1057)	54.06 (4.33)	69.05 (4.13)
NIH	3	16.60 (1.92)	1003 (225)	2178 (467)	54.74 (2.61)	59.41 (2.61)
All	111	15.61(4.12)	1092 (992)	2351 (2090)	56.96 (5.95)	61.56 (5.87)