The Patient-Reported Outcomes Measurement Information System: Prevalence, Characteristics, and Trends in Orthopaedics Literature

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INTRODUCTION:

The Patient-Reported Outcomes Measurement Information System (PROMIS®) was introduced to address the lack of standardization in clinical research and the need for a rigorously tested patient-reported outcome (PRO) measurement tool. The initial adoption of the PROMIS measures within the orthopaedics literature was substantial; however, it is unclear whether its use is prevalent across the various orthopaedic subspecialties. PROMIS has been validated in patient populations with orthopaedic disorders of the hand and upper extremity, foot and ankle, and spine and has demonstrated a marked improvement in measurement characteristics and reduced patient and administrative burden. Our hypothesis is that there is a significant variation in the utilization of PROMIS across different divisions of orthopaedic surgery. The purpose of this study is to examine the prevalence, characteristics, and trends in the use of PROMIS measures across the various orthopaedic subspecialties.

METHODS:

Multiple databases (PubMed; MEDLINE; EMBASE; CINAHL) were queried for PROMIS literature across all orthopaedic literature, between January 2004 and May 2023. The initial search yielded 146,235 results, which were analyzed by two independent reviewers to find all original studies available in English that utilized PROMIS in their outcomes. Studies that did not provide full-text or utilize PROMIS were excluded. Two independent reviewers reviewed each article and disagreements were settled via a third reviewer. In the end, 719 studies were jointly identified that have utilized PROMIS in their outcomes. The following data was collected: date of publication, subspecialty of orthopaedics, impact factor of journal, and countries of research origin.

RESULTS: In total, 719 article met the inclusion criteria and were included in this study. The impact factor of journals ranged from .176 to 13.79 with a mean of 3.04. The top subspecialties for PROMIS use in publications were Spine with 180 studies, Hip and Knee with 120 studies, and Shoulder with 88 studies. Other subspecialties were as follows: Foot and Ankle (n=61), Hand (n=52), Trauma (n=41), Pediatrics (n=25), Oncology (n=25), Sports Medicine (n=19), Chronic Pain (n=12), Rheumatology (n=3), and uncategorized general studies (n=93). The years of publication of these studies ranged from 2004 to 2023, with a consistently number of studies mentioning PROMIS published each year (Figure 1). Of the 719 studies, 686 originated in the United States, 15 from the Netherlands, 6 from China, 3 from Canada, and 1 each from various other countries.

DISCUSSION AND CONCLUSION:

While the adoption of PROMIS measures within orthopaedics has been significant, there is a significant variation in the degree of adoption across the various subspecialties. Increased awareness of the trends in the use of PROMIS measures is needed to promote increased standardization in clinical research via the use of a rigorously tested patient-reported outcome (PRO) measurement tool.