

# More Tech-Savvy Than You Think: Digital Prevalence and Proficiency Among Total Joint Arthroplasty Patients

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## INTRODUCTION:

Digital devices such as smartphones can be effective for collecting surgical outcomes, but there is a limited understanding of whether these devices can be utilized to engage a predominantly elderly total joint arthroplasty (TJA) population. The purpose of this study was to investigate the prevalence of smart device use and proficiency in TJA patients in different age groups.

## METHODS:

We prospectively surveyed 201 patients presenting for total hip or total knee arthroplasty at a single institution. Patients were administered the 16-item Mobile Device Proficiency Questionnaire (MDPQ-16) survey. Additional questions were asked about patients' device use frequency. Survey data were compared based on whether patients were older or younger than 65 years.

## RESULTS:

The mean age of the cohort was 70.3 years, and 39 (19.4%) were under age 65. Both age groups had a significantly high prevalence of smartphone daily use (84.6% in younger, 80.2% in older;  $P=0.005$ ). Regardless of age group, patients reported similar ease of use in tasks involving navigating the onscreen menus, typing with the onscreen keyboard, and sending emails ( $P>0.05$  for each). Younger patients reported significantly better proficiency when checking upcoming and prior appointment information (76.9% versus 50.6%,  $P=0.005$ ), entering events into a calendar (76.9% versus 44.4%,  $P<0.001$ ), and sending pictures by email through smart devices (79.5% versus 51.9%,  $P=0.013$ ).

## DISCUSSION AND CONCLUSION:

Age was not a barrier to smartphone use. Older patients were comparably proficient to younger patients in navigating onscreen menus or keyboards, sending emails, and accessing appointment information – skills that directly translate to orthopaedic practice engagement via application-based data collection or web-based survey distribution. This proficiency creates an opportunity to utilize these digital tools for research or patient-reported outcomes engagement. Orthopaedic practices should integrate hybrid digital strategies to improve patient participation in future research and better inform outcomes.

Figure 1. Technology use prevalence among the overall patient cohort based on weekly to daily use.

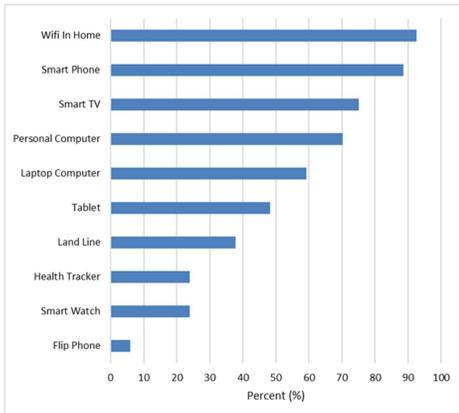
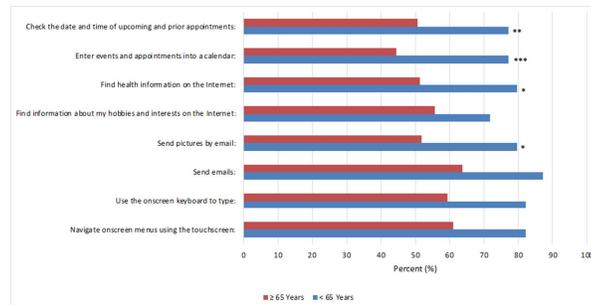


Figure 2. Selected questions on the 16-item Mobile Device Proficiency Questionnaire that pose clinical relevance based on superlative response ("very easily") to each question item.



Asterisks represent statistical significance: \* =  $P < 0.05$ ; \*\* =  $P < 0.01$ ; \*\*\* =  $P < 0.001$ .