



A Retrospective Analysis of Telehealth Access and Digital Disparities Among Medicare Beneficiaries During the COVID-19 Pandemic



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Introduction

In March 2020, COVID-19 was declared a global pandemic, disrupting traditional healthcare delivery. To mitigate transmission while preserving access to care, health systems rapidly expanded telehealth services using audio and video technologies. Telehealth has demonstrated effectiveness when patients are adequately supported; notably, an osteopathic pediatric case series reported that guided telehealth interventions were feasible and associated with improved outcomes during the pandemic (Kramer & De Asis, 2021). However, telehealth utilization depends on awareness, digital access, and technological literacy, which vary across demographic groups. Understanding these disparities among Medicare beneficiaries is critical for advancing equitable population health strategies.

Methods

This retrospective cross-sectional study analyzed publicly available data from the Medical Current Beneficiary Survey (MCBS) COVID-19 Supplement, which includes telephone survey data from Summer 2020, Fall 2020, and Winter 2021 in response to the COVID-19 pandemic. Telehealth awareness, availability, modality and measures of digital access were analyzed. Associations with age, gender, and race/ethnicity were assessed using unweighted Pearson chi-square tests, with statistical significance defined as $p < 0.05$.

Figure 1

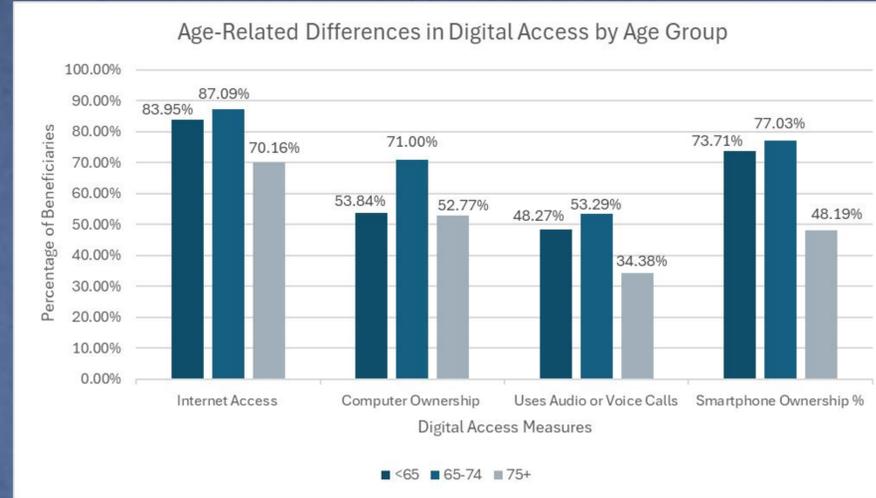


Figure 3

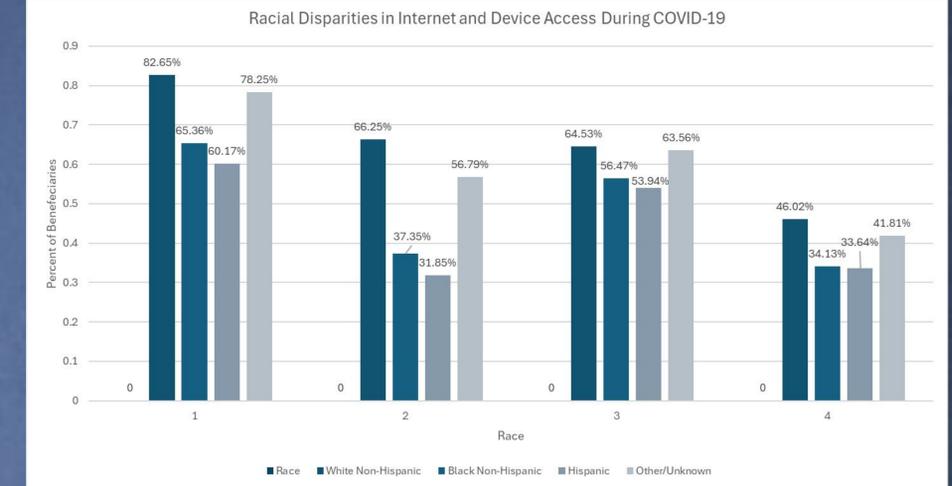
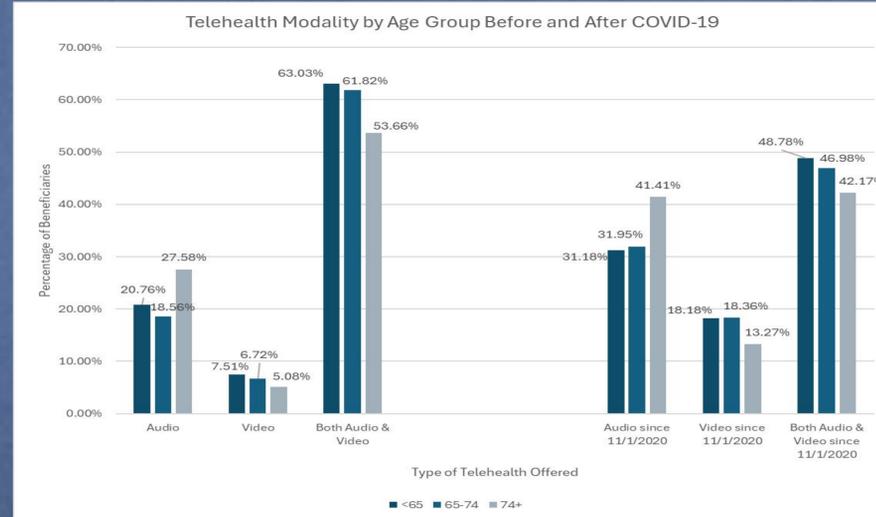


Figure 2



Results

Across all analyses, age demonstrated the strongest and most consistent associations with digital access and telehealth modality. As shown in **Figure 1**, the oldest age group had substantially lower smartphone, computer, internet, and audio/video access compared to younger beneficiaries. Pairwise comparisons confirmed that differences between the middle and oldest age groups were particularly pronounced. **Figure 2** illustrates modality differences, with older adults more likely to rely on telephone-only care and less likely to use video or combined modalities, especially later in the pandemic. **Figure 3** shows significant racial disparities in digital infrastructure, with minority groups exhibiting lower internet and device access compared to White beneficiaries. Gender differences were statistically significant but comparatively modest.

Conclusion

Digital infrastructure disparities closely mirror known COVID-19 outcome inequities. Older adults and racial minorities—groups disproportionately affected by severe COVID-19—were less equipped to utilize video-based telehealth. Reduced digital readiness may have limited timely remote evaluation, monitoring, and care continuity during pandemic surges. Telehealth expansion alone is insufficient; targeted strategies to improve device access, broadband connectivity, and digital literacy are essential to prevent amplification of existing health disparities in future public health emergencies.



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