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344

Telehealth utilization among patients with skin cancerA Munjal¹ and R Tripathi^{1,2} *1 The University of Iowa Hospitals and Clinics, Iowa City, Iowa, United States and 2 Johns Hopkins Medicine, Baltimore, Maryland, United States*

Background: Skin cancers are the most common cancers in the United States. The expansion of tele dermatology has been greatly expedited by the COVID-19 pandemic. Our objective was to evaluate trends in the utilization of telehealth among patients with skin cancer. Methods: Patients with skin cancer were identified using the nationally representative National Health Interview Survey (NHIS) 2020, produced by the CDC. Descriptive analyses were initially used to evaluate the relationship of patient characteristics with use of telehealth over the past year. Multivariable logistic regression was used to determine which characteristics were most predictive of using telehealth among patients with skin cancer. Results: 939 patients with skin cancer were included in this study (59.1% keratinocyte carcinoma, 26.3% melanoma, and 14.6% other). 44.7% of patients reported having a virtual appointment with a provider in 2020; 85.5% of these patients reported a virtual visit due to reasons related to COVID-19. In multivariable analyses, the strongest predictors of increased telehealth use were immunosuppression (adjusted odds ratio [aOR] 2.63, $p < 0.001$), living in a larger urban area (aOR 1.48, $p = 0.005$), age over 65 (aOR 1.35, $p = 0.049$), having a college education (aOR 1.58, $p = 0.002$), and having a functional limitation (aOR 2.22, $p < 0.001$). Patients with a regular healthcare provider were more likely to use telehealth than those without one ($p = 0.02$). Telehealth use was associated with increased emergency department use and increased hospitalization rate ($p < 0.001$). Employed patients were less likely to use telehealth ($p = 0.01$). Income, sex, and marital status were not associated with telehealth use. Conclusion: Telehealth improves access to safe and affordable care for patients with skin cancer, particularly among those who may have barriers to attending traditional in-person visits (immunosuppressed and functionally impaired patients). Further expansion of telehealth should target younger patients with skin cancer, those with lower educational status, and patients who live outside large urban centers.



345

The burden of atopic dermatitis out-of-pocket healthcare expenses in United States childrenR Chovatiya¹, W Smith Begolka², JJ Thibau² and JJ Silverberg³ *1 Department of Dermatology, Northwestern University Feinberg School of Medicine, Chicago, Illinois, United States, 2 National Eczema Association, Novato, California, United States and 3 Department of Dermatology, The George Washington University School of Medicine and Health Sciences, Washington, District of Columbia, United States*

Atopic dermatitis (AD) is associated with elevated financial costs, including out-of-pocket (OOP) expenses. Yet, the full burden of OOP expenses in children with AD is poorly understood. We characterized categories, impact, and associations of OOP AD healthcare expenses in US children. An online survey was administered to National Eczema Association members (N=113,502). Inclusion criteria (US resident; respondent age ≥ 18 ; self or caregiver report of AD diagnosis) was met by 77.3% (1,118/1,447). Children (<18 yrs) vs. adults (≥ 18 yrs) with AD had similar overall severity but increased healthcare provider (HCP) visits, comorbid food allergy, cutaneous infections, and topical antimicrobial use ($P < 0.005$ for all), and increased OOP expenses for hospitalization (4.6% vs. 1.9%), emergency room visits (17.7% vs. 12.1%), emollients (98.6% vs. 93.1%), hygiene/bathing products (91.1% vs. 83.3%), childcare (14.2% vs. 2.8%), and specialized cleaning products (86.6% vs. 71.6%), and clothing/bedding (62.0% vs. 40.3%) ($P < 0.05$ for all). Children vs. adults with AD had increased median total yearly OOP expenditures (\$860 vs. \$500, $P = 0.002$) and were more likely to spend $\geq \$1000$ OOP per year (48.9% vs. 40.0%, $P = 0.03$). In children, yearly OOP expenses $\geq \$1000$ were associated with increased AD severity, flares, HCP visits, prescription polypharmacy, and step-up therapy use ($P < 0.005$ for all). Children and adults reported similarly harmful household financial impact from OOP expenses ($> 60\%$ each). Predictors of harmful impact among children included black race (adjusted OR [95% confidence interval]: 3.86 [1.66-8.98] $P = 0.002$) and $\geq \$1,000$ annual OOP expenditures (6.98 [3.46-14.08], $P < 0.0001$). Children with AD have unique and increased OOP expenses that are associated with significant disease burden. Strategies are needed to reduce OOP costs and improve clinical outcomes in children with AD.



346

Health literacy and the ability to understand postoperative instructions in patients undergoing Mohs micrographic surgeryH Reddy¹, D DeMeo¹, A Maytin² and BT Carroll² *1 Case Western Reserve University, Cleveland, Ohio, United States and 2 Dermatology, UH Cleveland Medical Center, Cleveland, Ohio, United States*

Health literacy refers to an individual's ability to navigate the healthcare system and make health-related decisions. Numerous studies link low health literacy with poor outcomes in chronic diseases; however, few studies investigate the impact of health literacy in a surgical setting. Appropriate wound care and pain medication use are imperative for safe recovery after Mohs surgery. Because of this, it is of interest to explore the relationship between health literacy and comprehension of medical instructions in Mohs patients. The primary objective of this study was to determine whether low health literacy was linked to poor comprehension of postoperative wound care instructions in patients undergoing Mohs micrographic surgery. The validated Newest Vital Sign (NVS) survey measured the health literacy level of participants. An additional questionnaire assessed the participants' understanding of pain medication usage as described in their postoperative instructions. A secondary objective of this study was to determine whether a health literacy screening question accurately predicts health literacy in the Mohs population. The widely used screening question employed in this study asks, "How often do you have someone help you read hospital materials?" Of the 24 participants, 58.3% had adequate health literacy as defined by the NVS. Despite this, 79.2% of participants responded "Never" to the health literacy screening question. Furthermore, 45.8% of participants incorrectly identified the timing and dosage of postoperative pain medication. While further investigation is needed to determine the link between health literacy and understanding of postoperative instructions in Mohs patients, preliminary data suggests that some patients are unable to adequately comprehend critical instructions. Identifying methods to screen for and recognize vulnerable patients may allow clinicians to better tailor educational materials to these individuals.



347

Patient interest in Mohs surgery telehealth services beyond the COVID-19 pandemicA Munjal¹ and R Tripathi^{1,2} *1 The University of Iowa Hospitals and Clinics, Iowa City, Iowa, United States and 2 Johns Hopkins Medicine, Baltimore, Maryland, United States*

Background: Telemedicine in Mohs micrographic surgery (MMS) has expanded significantly throughout the COVID-19 pandemic. Despite this, the role of telemedicine in MMS in the post-pandemic world remains unclear. Our objective was to evaluate trends in patient interest in MMS telehealth services through the COVID-19 pandemic and determine whether heightened interest has persisted following the initial stay-at-home orders. Methods: A Google Trends study was performed to assess interest in MMS telehealth services using the terms "mohs surgery/surgeon + virtual/telehealth" and "skin cancer surgery + virtual/telehealth," which were found to have the greatest inter-term reliability. The results were converted into a combined search volume index (CSIV) with a maximum value of 100. Comparisons were made between the pre-pandemic (1/11/2018-3/1/2020), pre-vaccine (3/1/2020-1/3/2021), and post-vaccine periods (1/3/2021-1/11/2022). Results: The pre-pandemic period mean CSIV was stable at 6.69 (SD 1.19). CSIV peaked at 98.5 on 3/22/2020, decreased to 29.36 (SD 18.95) during the pre-vaccine period, and remained at 18.89 (SD 2.48) during the post-vaccine period ($p < 0.001$). Search interest gradually increased prior to the pandemic (slope 0.016 CSIV/week, r -square 0.189) and plateaued post-vaccine. Prior to the pandemic, search interest for virtual MMS services was highest in metropolitan coastal cities. Pre-vaccine, search interest was highest in rural areas, and post-vaccine, search interest remains highest in smaller metropolitan areas in the Midwest. Conclusion: Public interest in telehealth services for MMS increased drastically during the COVID-19 pandemic and remains significantly elevated when compared to pre-pandemic levels despite reopening of in-person dermatologic care. Given persistent interest among patients, dermatologists should continue to investigate avenues to offer virtual care. Pre-operative evaluations and post-surgical management may be particularly apt for telemedicine when preferred by patients and providers.



348

Examining past, present & future shared decision making among eczema patients and caregiversA Loissele¹, JJ Thibau¹, E Latour², E Foster³ and W Smith Begolka¹ *1 National Eczema Association, Novato, California, United States, 2 Biostatistics Shared Resource, Oregon Health & Science University Knight Cancer Institute, Portland, Oregon, United States and 3 Center for Health & Healing, Oregon Health & Science University, Portland, Oregon, United States*

Engaging in shared decision making (SDM) can help patients evaluate and make key healthcare choices for their care. SDM has been shown in several diseases to improve outcomes and is well-suited for conditions like eczema for which several treatment options exist and the clinical and lived experience is varied, yet little is known about the use and experience of SDM in eczema care. To understand SDM in eczema care settings from the patient/caregiver perspective, the National Eczema Association conducted an online survey to assess "past SDM" (SDMQ9, score ranges transformed to 0-100), "present SDM" (Control Preferences Scale), and "future SDM" (self-reported confidence and motivation to engage in SDM) behavior. Inclusion criteria (US resident, patient or caregiver of patient ≤ 17 yr, respondent age ≥ 18 yr) was met by 94.7% (1,313/1,387). Respondents were mostly female (80%) adult (82%) patients with mean patient RECAP score of 11.7 (SD 7.2), mean patient age 39.5 yr (SD 22.2), and mean SDMQ9 score of 65.1 (SD 27.4). For present SDM, 50% reported "I prefer to make the final decision after seriously considering my doctor's opinion" and 69% reported being very/extremely confident to engage in SDM in the future. Those "very well informed" about the causes of eczema had a 14.7 point higher (95% CI 9.2-20.2, $p < 0.001$, multiple linear regression) SDMQ9 score than those "not adequately informed" and were 3.4 times more likely (95% CI 2.1-5.7, $p < 0.001$, multiple logistic regression) to be confident to engage in future SDM. Respondents commonly cited healthcare providers (HCPs) initiating SDM conversations and the perception of HCPs valuing their input as motivators to future SDM. This study suggests that a majority of eczema patients/caregivers prefer a large role in decision making for their care and that HCPs have an important opportunity to initiate and facilitate SDM in eczema care settings.



349

Development of a digital tool for home-based monitoring of skin disease for older adultsS van Egmond, Z Cai, V Nava, B Rapaport, J Ko, A Chiou, KY Sarin, J Tang, S Bousheri, L Zhang and E Linos *Dermatology, Stanford University, Stanford, California, United States*

The COVID-19 pandemic has accelerated the adoption of telemedicine. However, current tools pose substantial barriers for older adults and those with low digital literacy. By implementing user-centered design, we developed a digital tool, Dermatology for Older Adults (DORA), for home-based monitoring of skin disease, specifically designed for older adults. DORA is a virtual assistant based on REDCap and Twilio APIs that automates image and symptom collection and allows communication between patients and the research team. We evaluated the feasibility, usability, patient compliance, retention, and clinical utility of DORA. Eligibility criteria included patients > 70 years with any skin disease, access to a smartphone, and no cognitive impairment. We recruited 62 patients aged 70-94 (mean age 77), 39% female, 81% white from Stanford's Dermatology Clinic from August-December 2021. We asked patients to send weekly photos and answer a questionnaire of a single skin lesion for 4 weeks, then monthly for 4 months. We measured response time, photo quality, and participant satisfaction using mHealth app usability questionnaire (MAUQ). The median response time was 1.4 days (IQR 0.6-3.4). Four participants dropped out. 83% completed photo submission requests (48% at initial request, 19% after 1st reminder and 16% after 2nd reminder). 80% of all questionnaires requested (131 of 163) were completed. Four dermatology clinicians evaluated the quality of the first 88 images and reported good confidence in triaging skin diseases. MAUQ scores were high for ease of use (5.6 SD1.3), interface satisfaction (5.5 SD1.3), and usefulness (5.2 SD1.3). Patients were consistently able to use DORA to submit photos and symptoms and reported high usability and satisfaction. Patient retention was high, and clinicians felt confident making triage recommendations based on DORA images. This approach can be used in other settings where digital literacy barriers and unequal access to dermatologists contribute to healthcare disparities.

