

Are they aware, are they ready? Patient's utilization of community pharmacist advanced and technology-based provided care

Maeleigh Tidd, PhD¹; K. Ashley Garling-Nanez, PharmD²

¹University of Miami, School of Nursing and Health Studies, Miami, FL

²The University of Texas at Austin College of Pharmacy

Abstract

Background: Pharmacists, as the most accessible healthcare team members, are uniquely positioned to leverage technology to increase healthcare access. The increasing prevalence of technological innovations such as telemedicine, health hub programs, and e-visits, prompts the question of whether the public can benefit from pharmacist-provided care through technology.

Objective(s): The primary aim of this investigation is to evaluate patients' awareness and readiness to use technology-based pharmacist-led patient care services.

Methods: A cross-sectional survey was distributed to Texas, Oregon, Washington, Wisconsin, New Mexico, and Arizona participants to assess patients' awareness and readiness levels to use pharmacist-provided care through technology-based solutions. Descriptive statistics were used to summarize the participants' level of awareness of and readiness to use the services/platforms, their prior experience with the services/platforms, and demographics. Chi-squared tests were performed on the categorical variables (corresponding to each advanced service and technology platform) by participants' demographics.

Results: Patients were most aware of pharmacists providing immunizations (61%) and over-the-counter medication recommendations (56%) and less aware of automated medication dispensaries (78%), HealthHub (44%), and video conferences/e-visits (42%). Despite their lack of awareness, most patients reported being ready to use technology platforms in the pharmacy. Participant gender, education, and access to primary health care were found to be significantly associated with their awareness while having health insurance or a chronic health condition was found to be significantly associated with their readiness to use a service and/or technology platform.

Conclusion: The results of this study provide another promising contribution to the literature supporting the use of technology to improve patient outcomes, increase healthcare access, and inspire and motivate the healthcare community to continue to reduce health inequities in the United States. Further work is needed to expand knowledge into the perceptions, preferences, and access of patients to further address the use of advanced and technology-based pharmacy services.

Keywords: community pharmacy services, telemedicine, pharmacy technology, community pharmacy practice

Introduction

Pharmacists have transformed from primarily dispensing to providing advanced patient care services, which include medication therapy management, chronic disease management, health screenings, point-of-care testing, and other roles beyond medication distribution.^{1,2} Studies indicate that the public generally understands pharmacists' roles, with frequent users of pharmacy services being more knowledgeable about pharmacist-led advanced care options.^{1,3,4}

Chronic diseases are among the most common health conditions, particularly in older adults. Approximately 130 million people live with at least one chronic disease, and about 46% take more than one prescription medication monthly.⁵⁻⁷ These chronic diseases include diabetes, heart disease, chronic obstructive pulmonary disease, and asthma, leading to both physical and financial burdens for patients.^{5,6} Advanced pharmacy services, such as medication therapy management, chronic disease management programs, and pharmacist-led interventions, have proven effective in improving health outcomes and reducing hospitalizations for patients with chronic conditions.⁸

Corresponding Author:

Maeleigh Tidd, PhD
University of Miami, School of Nursing and Health Studies
Miami, FL
mxt1526@miami.edu

By enhancing medication adherence, optimizing pharmacotherapy, and providing thorough patient education, pharmacists significantly contribute to minimizing complications and enhancing the quality of life for individuals with chronic illnesses.⁹⁻¹¹ Technology enhances pharmacists' ability to serve patients, especially those with limited access to healthcare, including older adults, individuals in rural areas, the uninsured or underinsured, and those managing chronic conditions.¹² Telemedicine, which refers to providing clinical

care via electronic communications such as smartphones and laptops, is one such technology.¹³

Research shows that pharmacists' telemedicine practices can improve access to advanced services and help eliminate distance and transportation challenges faced by rural patients.^{14,15} In addition to rural Americans, approximately 85% of older adults have expressed a preference for accessing healthcare remotely.¹⁶ Contrary to common beliefs, older Americans regularly use new technology; studies reveal that nearly 80% own cell phones and about 60% use the internet.¹⁷ Since 2020, there has been a noticeable increase in older adults utilizing technology-based healthcare services, including virtual primary care and pharmacy visits.¹⁸ Furthermore, there is a growing trend to support older adults in leveraging technology-based pharmacy services to address medication non-adherence, particularly among those with chronic diseases.^{19,20}

Patients can access medical information through various devices like cell phones, laptops, and smart televisions. These devices offer advanced capabilities that empower healthcare providers to enhance patient access and care through technology platforms such as remote consultations and mobile applications.²¹ In addition to electronic communications, other technology-driven options like health hubs and kiosks can provide on-demand consultations and medical services. Although technology for improved access is currently utilized across the country, the readiness and awareness of patients to engage with advanced pharmacy services that rely on technology remain largely unknown.

Objective

The primary objective of this investigation is to evaluate patients' awareness and readiness to use technology-based pharmacist-led advanced patient care services.

Methods

This study used an electronic Qualtrics survey accessed via QR code with consent built into the beginning of the survey. This research was completed in collaboration with Colleges of Pharmacy in Oregon, Washington, Georgia, Wisconsin, and New York. The cross-sectional survey of participants residing in Texas, Oregon, Washington, Georgia, Wisconsin, Arizona, and New Mexico was conducted to assess patients' awareness and readiness levels to use pharmacist-provided care through technology-based solutions. IRB approval was obtained through The University of Texas at Austin.

The scope of pharmacy practice between states differs due to individual state legislation. At the time of the study, New York, Georgia, and Texas had collaborative practice agreement ability and all participating states' pharmacies had vaccination administration authority and naloxone ordering capabilities for their pharmacists. Wisconsin pharmacists as of 2021, following the study, could provide point-of-care testing and

utilize general collaborative practice agreements to prescribe oral contraception. Oregon and Washington both had expanded scope as far as independent prescribing ability, with Oregon utilizing a state-authorized formulary and Washington utilizing collaborative drug therapy agreements.

Data Collection

The survey information was displayed to members of the public in a grocery store pharmacy, chain pharmacy, multi-depot pharmacy, and independent pharmacy within each location using a poster and individual QR business cards for home access. A QR code linked to the survey was used to provide remote survey capabilities for patients to participate hands-free and virtually to further prevent the spread of COVID-19. The variety of pharmacies was varied to improve the external validity of the results as it pertained to the general knowledge of the public.

Participants

Participants were excluded if they are less than 18 years of age or over 89 years of age, have not filled one prescription in the past six months, or were licensed pharmacists. This was screened at the beginning of the survey and anyone outside of the exclusion criteria were included, even those that worked with or adjacent to a pharmacist. The inclusion of participants that worked with or adjacent to a pharmacist were still included by means of being within the general population and not typically knowledgeable about scope of practice as it pertains to pharmacists.

Survey

In this study, survey participation took up to 15 minutes and was designed for up to 4000 participants. The participants completed an electronic HIPAA Compliant Qualtrics survey to assess their awareness and readiness to use technology-based pharmacy services. Survey questions measured participants' awareness of and ready to use services on a Likert scale from 1 (not at all aware/unready) to 5 (extremely aware/ready). The survey had a total of 15 questions, 4 measuring awareness and readiness, 2 capturing if they have ever used the services and technology platforms, and 9 collecting demographic information including gender, age, race, education, etc.

The survey was developed using two main sources. First, items were adapted from two published surveys, one targeting patients²² and the other healthcare providers²³, that assessed awareness, expectations, and perceptions of pharmacists' services. Second, new items were created to assess awareness and readiness to use technology for accessing advanced pharmacy services (including the technologies available in the pharmacy at the time the study was developed and conducted). All questions underwent a rigorous pilot process within the university system to ensure clarity, validity, and reliability before implementation.

Statistical Analysis

Data was exported from Qualtrics and imported into SPSS Version 27. Descriptive statistics were used to summarize participant levels of awareness of and readiness to use the services/platforms, their prior experience with the services/platforms, and demographics. The Likert scale was reduced from five categories to three, including not at all aware/ready, less aware/ready, and more aware/ready. A chi-squared test was performed on the categorical variables (corresponding to each advanced service and technology platform) by participants' demographics. For accurate chi-squared analysis, the awareness/readiness scale was condensed to two categories, not aware/ready and some level of awareness/readiness. Additionally, demographic categories were condensed appropriately.

Results

A total of 64 individuals completed the electronic survey, where 65.6% resided in Texas, 70.3% were female, 53.1% identified as being White, and majority of participants had received higher education (89%). Most participants reported having health insurance and access to primary health care (Table 1).

Table 1. Participant Demographics

Characteristic	Frequency n (%) n=64
State	
Texas	42 (65.6)
Oregon	10 (15.6)
Wisconsin	9 (14.1)
Washington	1 (1.6)
Arizona	1 (1.6)
New Mexico	1 (1.6)
Gender	
Female	45 (70.3)
Male	17 (26.6)
Other	2 (3.1)
Race/Ethnicity	
White	34 (53.1)
Black/African American	2 (3.1)
Hispanic/Latino	10 (15.6)
Native American/American Indian	1 (1.6)
Asian/Pacific Islander	11 (17.2)
White & Asian/Pacific Islander	2 (3.1)
White & Hispanic/Latino	3 (4.7)
White & Black/African American	1 (1.6)

Characteristic	Frequency n (%) n=64
Education	
<HS diploma	1 (1.6)
HS degree or equivalent	4 (6.3)
Some college	15 (23.4)
Associates degree or trade school	2 (3.1)
Bachelor's degree	23 (35.9)
Master's degree	14 (21.9)
Advanced degree (PhD, Law, Medical, etc.)	5 (7.8)
Household Income	
<25K	5 (7.8)
25-50K	11 (17.2)
50-75K	6 (9.4)
75-100K	12 (18.8)
>100K	26 (40.6)
Prefer not to answer	4 (6.3)
Health Insurance	
Yes	63 (98.4)
No	1 (1.6)
Access to Primary Health Care	
Yes	58 (90.6)
No	6 (9.4)
Chronic Health Conditions	
0	27 (42.2)
1	16 (25.0)
2	8 (12.5)
3	5 (7.8)
4+	6 (9.4)
Prefer not to answer	2 (3.1)

Abbreviations: HS, high school; PhD; doctor of philosophy

Awareness & Readiness

For advanced pharmacy patient care services, awareness and utilization varied widely, reflecting differing levels of familiarity and perceived relevance among participants (Table 2). Immunization services were the most recognized and utilized, with 60.9% reporting high awareness and 76.6% having used them. In contrast, services such as opioid overdose prevention and diabetes management/education exhibited low awareness and minimal use, with over half of participants reporting being "not aware" of these offerings and less than 2.0% reporting use. Health screenings and oral contraceptive prescribing demonstrated moderate awareness (46.9% and 53.2%) and readiness (50.0% and 56.3%). Over-the-counter (OTC) medication recommendations stood out as

another well-integrated service, with 56.3% being more aware and nearly 69% reporting use. Conversely, services such as smoking cessation, nutrition guidance, and tuberculosis testing showed low awareness and readiness, mirroring their limited adoption.

Across technology-based pharmacist-led advanced patient care services, participants demonstrated moderate to high levels of awareness and readiness, though actual use varied by service type (Table 2). Remote consultations and mobile applications were among the most recognized and accepted technologies, with more than 60% of participants reporting readiness to use them and over half having already engaged in remote consultations. Despite this readiness, services such as automated medication dispensaries had notably low awareness (78.1%) and minimal use (6.3%). Similarly, while participants showed interest and preparedness for HealthHub (i.e., an online model offering expanded wellness services and access to a broader range of health products) and video conferencing platforms, usage still lagged behind readiness.

Associations

Chi-square analyses revealed several significant associations between participant demographics and awareness or readiness to use advanced patient care services. Female participants were more likely than males to report awareness of pharmacists providing health screenings ($\chi^2(1, N=64)=7.67, p=0.006$), prescribing oral contraceptive ($\chi^2(1, N=64)=9.27, p=0.002$), and point-of-care testing ($\chi^2(1, N=64)=4.74, p=0.030$). Educational attainment was also associated with awareness of select services. Participants with less than a bachelor's degree were less likely to be aware that pharmacists provide immunizations ($\chi^2(2, N=64)=6.01, p=0.050$), yet more likely to be aware of inhaler technique education ($\chi^2(2, N=64)=6.16, p=0.046$) compared to those with higher degrees. Access to primary health care influenced awareness as well, with participants having primary care access being less likely to recognize pharmacists' ability to prescribe oral contraceptives ($\chi^2(1, N=64)=5.84, p=0.016$) than those without such access. Significant associations were also observed by race and ethnicity, participants identifying as White were less likely to report awareness of pharmacists providing inhaler technique education ($\chi^2(3, N=64)=8.63, p=0.035$) and less likely to report readiness to use fluoride replacement services ($\chi^2(3, N=64)=7.96, p=0.047$) compared to participants of other racial or ethnic backgrounds.

Chi-square analyses also identified several significant associations between participant demographics and awareness or readiness to use technology-based pharmacist-led advanced services. Participants with less than a bachelor's degree were more likely to report awareness of pharmacists providing remote consultations ($\chi^2(2, N=64)=6.24, p=0.044$) compared to those with higher educational attainment. Readiness to use technology-based tools also varied by health status; participants without a diagnosed chronic health

condition were more likely to report readiness to use automated medication dispensaries ($\chi^2(2, N=64)=10.32, p=0.006$) than those with one or more chronic conditions. Significant differences were also observed by race and ethnicity. Participants identifying as Hispanic/Latino were more likely to report not being aware of pharmacist-led services offered through HealthHub ($\chi^2(3, N=64)=8.25, p=0.041$) and not being ready to use remote consultations ($\chi^2(3, N=64)=8.29, p=0.040$) compared to participants from other racial or ethnic backgrounds.

Discussion

This study explored patients' awareness and readiness to engage in technology-based pharmacist-led advanced patient care services and identified demographic factors associated with these perceptions. Overall, participants demonstrated moderate to high awareness and readiness to use technology-based pharmacy services, particularly remote consultations and mobile applications. These findings align with existing literature indicating increased acceptance of telehealth and digital health tools among adults, including older populations, since the onset of the COVID-19 pandemic.^{12,16–18} Despite this readiness, the relatively low reported use of some services, such as automated medication dispensaries and HealthHub platforms, suggests that availability and patient familiarity remain limiting factors. This gap between readiness and utilization highlights opportunities for pharmacists to enhance patient education, visibility, and access to technology-enabled care delivery models.

Demographic differences further illustrate potential inequities in awareness and engagement with advanced pharmacy services. Female participants demonstrated greater awareness of pharmacist-provided preventive and reproductive health services, consistent with prior evidence that women more frequently seek and utilize community-based healthcare resources.^{24–26} Educational attainment also influenced awareness, with participants holding less than a bachelor's degree being more familiar with certain practical pharmacist services, such as inhaler technique education and remote consultations. This may reflect differing exposure to community pharmacy environments or variations in how pharmacists communicate service offerings across populations. Additionally, participants with access to primary care were less likely to identify pharmacists as providers of select clinical services, suggesting possible overlap or confusion in provider roles that may limit broader recognition of pharmacists as part of the primary care team. Notably, racial and ethnic differences emerged, particularly among Hispanic/Latino participants, who were less likely to be aware of and ready to use certain technology-based pharmacy services. This finding underscores persistent disparities in digital health literacy and trust in healthcare technologies among racial and ethnic minority groups.²⁷ Targeted efforts to promote culturally and linguistically tailored education about

technology-based pharmacy services could help reduce these gaps.

This study has several strengths that make it a valuable contribution to understanding patients' awareness and readiness to use advanced and technology-based pharmacist-led services. Specifically, the study underscores the potential of technology-based pharmacy services to address healthcare disparities, making a clear case for how these services can improve healthcare access for underserved populations. Additionally, this study expands on the literature by focusing on pharmacy services, adding valuable insights into how pharmacists can use technology to improve patient engagement and service accessibility. Finally, the study addresses an important and emerging area, patients' preparedness for pharmacy-led services, especially relevant in a post-COVID-19 era where digital health services are rapidly expanding. The study's relevance and contributions provide a well-rounded foundation for understanding and addressing gaps in patient awareness and readiness to engage in pharmacy advanced and technology services.

However, several limitations should be noted. The study was conducted during the height of the COVID-19 pandemic, a period when pharmacies and pharmacists predominantly relied on technology-based services. As a result, participants' awareness of and readiness to use these services may have been shaped by the unusual, pandemic-driven reliance on remote and digital pharmacy care, potentially skewing perceptions beyond typical conditions. Although the study covered several states, it lacked sufficient geographic diversity, with most respondents residing in Texas, potentially limiting generalizability to other regions. Furthermore, the sample's demographic composition, predominantly White, female, and highly educated, further constrains representativeness and statistical power. Simplifying the Likert scales for awareness and readiness was necessary for interpretation but may have reduced nuance in participants' responses. Finally, the study did not assess associations between service utilization and participant demographics, which could have offered deeper insights into barriers and facilitators of engagement with advanced and technology-based pharmacy services.

Future research should adopt a qualitative approach, incorporating interviews and focus groups to capture patient attitudes, perceptions, preferences, and experiences with technology-based pharmacy services. This approach would offer deeper insight into why certain populations may feel more or less prepared to use these services and enhance understanding of their unique needs. Additionally, studying real-world utilization of technology-based services could help clarify how awareness and readiness translate into actual service use and reveal any remaining barriers to access. Focusing patient experiences with specific services, such as telemedicine consultations and remote medication

management, would allow researchers to identify areas for improvement and better understand patient satisfaction, ultimately informing the development of more patient-centered, equitable, and sustainable technology-driven pharmacy care.

Conclusion

Studies have shown that the public generally understands what pharmacists do, but their awareness and readiness to use pharmacy technology-based advanced patient care services is largely unknown. This study begins to look at the evidence surrounding patient awareness and readiness to utilize pharmacist-led advanced services and additionally recognizes the potential of technology in transforming patient care. Analyzing awareness and readiness to use pharmacy technology-based services is a crucial step toward a more accessible and efficient healthcare system. As technology continues to shape healthcare delivery, pharmacists are well positioned to leverage digital tools to enhance access, equity, and patient-centered care.

Acknowledgements: The authors would like to acknowledge their research partners, Jeff Fortner, PharmD (The Pacific University), Olayinka Shiyankola, PhD (University of Wisconsin-Madison), Julie Akers, PharmD (Washington State University), and Monica Hwang, PhD (St. John's University), and Henry Young, PhD (The University of Georgia). Additionally, they would like to thank the student pharmacy researchers for their help in recruitment and data collection - Kathy Nguyen, Tu Doan, Mariah Sigala, and Sarah Cho (The University of Texas-Austin).

Funding Support: This research did not receive any specific grant from funding agencies in the public, commercial, or non-profit sectors.

Conflicts of Interest: We declare no conflicts of interest or financial interests that the authors or members of their immediate families have in any product or service discussed in the manuscript, including grants (pending or received), employment, gifts, stock holdings or options, honoraria, consultancies, expert testimony, patents, and royalties.

Treatment of Human Subjects: IRB review/approval required and obtained.

Disclaimer: The statements, opinions, and data contained in all publications are those of the authors.

References

1. Kelly DV, Young S, Phillips L, Clark D. Patient attitudes regarding the role of the pharmacist and interest in expanded pharmacist services. *Can Pharm J CPJ*. 2014;147(4):239-247. doi:10.1177/1715163514535731
2. Blouin RA, Adams ML. The Role of the Pharmacist in Health Care: Expanding and Evolving. *N C Med J*. 2017;78(3):165-167. doi:10.18043/ncm.78.3.165
3. Kember J, Hodson K, James DH. The public's perception of the role of community pharmacists in Wales. *Int J Pharm Pract*. 2018;26(2):120-128. doi:10.1111/ijpp.12375

4. Taylor S, Cairns A, Glass B. Consumer perspectives of expanded practice in rural community pharmacy. *Res Soc Adm Pharm RSAP*. 2021;17(2):362-367. doi:10.1016/j.sapharm.2020.03.022
5. Benavidez GA. Chronic Disease Prevalence in the US: Sociodemographic and Geographic Variations by Zip Code Tabulation Area. *Prev Chronic Dis*. 2024;21. doi:10.5888/pcd21.230267
6. Watson KB. Chronic Disease Indicators: 2022–2024 Refresh and Modernization of the Web Tool. *Prev Chronic Dis*. 2024;21. doi:10.5888/pcd21.240109
7. Charlesworth CJ, Smit E, Lee DSH, Alramadhan F, Odden MC. Polypharmacy Among Adults Aged 65 Years and Older in the United States: 1988–2010. *J Gerontol A Biol Sci Med Sci*. 2015;70(8):989-995. doi:10.1093/gerona/glv013
8. Umeh AU, Chima UE, Agbo CE, et al. Pharmacist-led medication therapy management: Impact on healthcare utilization and costs. *Am J Pharmacother Pharm Sci*. 2025;4. doi:10.25259/AJPPS_2025_004
9. Chisholm-Burns MA, Kim Lee J, Spivey CA, et al. US pharmacists' effect as team members on patient care: systematic review and meta-analyses. *Med Care*. 2010;48(10):923-933. doi:10.1097/MLR.0b013e3181e57962
10. Tan ECK, Stewart K, Elliott RA, George J. Pharmacist services provided in general practice clinics: a systematic review and meta-analysis. *Res Soc Adm Pharm RSAP*. 2014;10(4):608-622. doi:10.1016/j.sapharm.2013.08.006
11. Carter BL, Rogers M, Daly J, Zheng S, James PA. The potency of team-based care interventions for hypertension: a meta-analysis. *Arch Intern Med*. 2009;169(19):1748-1755. doi:10.1001/archinternmed.2009.316
12. Goundrey-Smith S. Examining the role of new technology in pharmacy: now and in the future. *The Pharmaceutical Journal*. February 11, 2014. Accessed June 11, 2025. <https://pharmaceutical-journal.com/article/news/examining-the-role-of-new-technology-in-pharmacy-now-and-in-the-future>
13. Kane-Gill SL, Niznik JD, Kellum JA, et al. Use of Telemedicine to Enhance Pharmacist Services in the Nursing Facility. *Consult Pharm J Am Soc Consult Pharm*. 2017;32(2):93-98. doi:10.4140/TCP.n.2017.93
14. Adunlin G, Murphy PZ, Manis M. COVID-19: How Can Rural Community Pharmacies Respond to the Outbreak? *J Rural Health*. 2021;37(1):153-155. doi:10.1111/jrh.12439
15. Poudel A, Nissen LM. Telepharmacy: a pharmacist's perspective on the clinical benefits and challenges. *Integr Pharm Res Pract*. 2016;5:75-82. doi:10.2147/IPRP.S101685
16. Turrini G, Branham DK, Chen L, et al. *Access to Affordable Care in Rural America: Current Trends and Key Challenges*. U.S. Department of Health and Human Services, Office of Health Policy, Assistant Secretary for Planning and Evaluation; 2021:23.
17. Perrin MA and A. 1. Technology use among seniors. Pew Research Center. May 17, 2017. Accessed June 11, 2025. <https://www.pewresearch.org/internet/2017/05/17/technology-use-among-seniors/>
18. Barriers and facilitators to the use of e-health by older adults: a scoping review | BMC Public Health | Full Text. Accessed June 11, 2025. <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-021-11623-w>
19. Emadi F, Ghanbarzadegan A, Ghahramani S, Bastani P, Baysari MT. Factors affecting medication adherence among older adults using tele-pharmacy services: a scoping review. *Arch Public Health*. 2022;80(1):199. doi:10.1186/s13690-022-00960-w
20. Bertolazzi A, Quaglia V, Bongelli R. Barriers and facilitators to health technology adoption by older adults with chronic diseases: an integrative systematic review. *BMC Public Health*. 2024;24(1):506. doi:10.1186/s12889-024-18036-5
21. Gandapur Y, Kianoush S, Kelli HM, et al. The role of mHealth for improving medication adherence in patients with cardiovascular disease: a systematic review. *Eur Heart J Qual Care Clin Outcomes*. 2016;2(4):237-244. doi:10.1093/ehjqcco/qcw018
22. King PK, Martin SJ, Betka EM. Patient Awareness and Expectations of Pharmacist Services During Hospital Stay. *J Pharm Pract*. 2017;30(5):506-515. doi:10.1177/0897190016665541
23. Pham NYT, Yon CM, Anderson JR, et al. Awareness and perceptions of advanced practice pharmacists among health care providers in New Mexico. *J Am Pharm Assoc*. 2021;61(1):101-108. doi:10.1016/j.japh.2020.10.001
24. Gomez AM, Rafie S, Garner-Ford E, et al. Community perspectives on pharmacist-prescribed hormonal contraception in rural California. *Contraception*. 2022;114:10-17. doi:10.1016/j.contraception.2022.05.013
25. Bertakis KD, Azari R, Helms LJ, Callahan EJ, Robbins JA. Gender differences in the utilization of health care services. *J Fam Pract*. 2000;49(2):147-152.
26. Vaidya V, Partha G, Karmakar M. Gender differences in utilization of preventive care services in the United States. *J Womens Health 2002*. 2012;21(2):140-145. doi:10.1089/jwh.2011.2876
27. Higashi RT, Thakur B, Repasky EC, et al. Digital Health Technology Use Among Spanish Speakers in the US: A Scoping Review. *JAMA Netw Open*. 2025;8(5):e2510386. doi:10.1001/jamanetworkopen.2025.10386

Table 2. Participants reported awareness & readiness to use the pharmacy/pharmacists' provided services/platforms

Services/Platforms	Awareness n(%)			Readiness n(%)			Used the service
	Not Aware	Less Aware	More Aware	Not Ready	Less Ready	More Ready	
<i>Advanced Services</i>							
Medication Therapy Management	23 (35.9)	33 (51.6)	8 (12.5)	8 (12.5)	38 (59.4)	18 (28.1)	13 (20.3)
Immunizations	3 (4.7)	22 (34.4)	39 (60.9)	2 (3.1)	11 (17.2)	51 (79.7)	49 (76.6)
Opioid Overdose Prevention/ Education	41 (64.1)	17 (26.6)	6 (9.4)	32 (50.0)	23 (35.9)	9 (14.1)	0 (0.0)
Health Screenings	18 (28.1)	30 (46.9)	16 (25.0)	7 (10.9)	32 (50.0)	25 (39.1)	19 (29.7)
Diabetes Management/ Education	31 (48.4)	26 (40.6)	7 (10.9)	31 (48.4)	19 (29.7)	14 (21.9)	1 (1.6)
Nutrition Guidance	42 (65.6)	19 (29.7)	3 (4.7)	14 (21.9)	27 (42.2)	23 (35.9)	3 (4.7)
Smoking Cessation	33 (51.6)	26 (40.6)	5 (7.8)	40 (62.5)	15 (23.4)	9 (14.1)	2 (3.1)
Oral Contraceptives (prescribing)	30 (46.9)	17 (26.6)	17 (26.6)	28 (43.8)	16 (25.0)	20 (31.3)	8 (12.5)
Over the Counter Medication Recommendation	3 (4.7)	25 (49.1)	36 (56.3)	1 (1.6)	17 (26.6)	46 (71.9)	44 (68.8)
Inhaler Technique Education	21 (32.8)	34 (53.1)	9 (14.1)	28 (43.8)	15 (23.4)	21 (32.8)	10 (15.6)
Travel Medications (prescribing)	33 (51.6)	25 (39.1)	6 (9.4)	13 (20.3)	26 (40.6)	25 (39.1)	7 (10.9)
Tuberculosis Testing	40 (62.5)	20 (31.3)	4 (6.3)	29 (45.3)	21 (32.8)	14 (21.9)	3 (4.7)
Fluoride Replacement	58 (90.6)	4 (6.3)	2 (3.1)	35 (54.7)	16 (25.0)	13 (20.3)	3 (4.7)
Point of Care Testing	24 (37.5)	24 (37.5)	16 (25.0)	12 (18.8)	22 (34.4)	30 (46.9)	13 (20.3)
<i>Technology for Advanced Services</i>							
Remote Consultations	25 (39.1)	23 (35.9)	16 (25.0)	3 (4.7)	21 (32.8)	40 (62.5)	36 (56.3)
Mobile Applications	22 (34.4)	29 (45.3)	13 (20.3)	2 (3.1)	21 (32.8)	41 (64.1)	25 (39.1)
Automated Medication Dispensary	50 (78.1)	12 (18.8)	2 (3.1)	11 (17.2)	25 (39.1)	28 (43.8)	4 (6.3)
HealthHub	28 (43.8)	20 (31.3)	16 (25.0)	5 (7.8)	27 (42.2)	32 (50.0)	25 (39.1)
Video Conferences/e-visits	27 (42.2)	25 (39.1)	12 (18.8)	5 (7.8)	18 (28.1)	41 (64.1)	28 (43.8)

N=64

"Less" - a little or somewhat aware/ready

"More" - very or extremely aware/ready