2022 Age of Champions

eHealth Readiness & Adoption among Older Adults during COVID-19

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eHealth

• The cost-effective and secure use of information and communication technologies (ICT) in support of health and health-related fields

• Telehealth, telemedicine, mobile health (mHealth), electronic medical or health records (eMR/eHR), big data, wearables, and even artificial intelligence
Background

Advantages of eHealth

COVID-19

Younger population
Urban Areas
High SES

Worsening Health & Health Care Disparities

Older population
Rural Areas
Low SES
Aims

To improve our understanding of eHealth readiness and adoption among older adults

Aim 1. To explore needs for and perceptions of eHealth among older adults

Aim 2. To investigate multilevel facilitators and barriers to eHealth adoption among older adults
Theoretical Framework
The Unified Theory of Acceptance and Use of Technology (UTAUT)

Figure 1. Intervention Framework: The Unified Theory of Acceptance and Use of Technology
Sample

- Older adults living in non-urban communities (N=31)
  July 2021-September 2021

- **Inclusion criteria**
  (a) living independently without any help from caregiver
  (b) living in the areas covered by any broadband services
  (c) having at least one chronic conditions and/or ongoing health issues

- **Exclusion criteria**
  (a) younger than age of 60
  (b) having a cognitive impairment or progressive disorder
Procedure and Data Collection

**Screening Interview via phone**
- Check inclusion/exclusion criteria: 1) Internet access, 2) Internet users or not, 3) independent zoom interview availability / or strong phone interview preference, 4) Interview schedule
- Overview the main interview

**One-hour zoom interview** (phone interview option)
- Perceptions of eHealth, ICT skills, social networks and environments associated with eHealth access and use
# Sample Characteristics

<table>
<thead>
<tr>
<th>Sample Characteristics</th>
<th>%</th>
<th>Sample Characteristics</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td><strong>Family structure</strong></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>80</td>
<td>Living alone</td>
<td>45</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td>Living only with a spouse</td>
<td>45</td>
</tr>
<tr>
<td>Mean=74.27 (SD=3.32, 60 – 88)</td>
<td></td>
<td>Living with others</td>
<td>10</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td><strong>Self-rated health</strong></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>52</td>
<td>Poor</td>
<td>4</td>
</tr>
<tr>
<td>Divorced/Widowed/Single</td>
<td>48</td>
<td>Fair</td>
<td>35</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td>Good</td>
<td>35</td>
</tr>
<tr>
<td>More than college</td>
<td>74</td>
<td>Very good</td>
<td>29</td>
</tr>
<tr>
<td>High school</td>
<td>23</td>
<td><strong># of doc visit</strong></td>
<td></td>
</tr>
<tr>
<td>Less than high school</td>
<td>3</td>
<td>Mean=3.93 / year (SD=3.58, 0 – 16)</td>
<td></td>
</tr>
<tr>
<td><strong>Income</strong></td>
<td></td>
<td>less than 3miles</td>
<td>23</td>
</tr>
<tr>
<td>&lt;$25k</td>
<td>21</td>
<td>3-5miles</td>
<td>13</td>
</tr>
<tr>
<td>$25k-35k</td>
<td>11</td>
<td>5-10miles</td>
<td>42</td>
</tr>
<tr>
<td>$35k-50k</td>
<td>21</td>
<td>more than 10miles</td>
<td>23</td>
</tr>
<tr>
<td>$50-75k</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;$75k</td>
<td>39</td>
<td></td>
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</tbody>
</table>
eHealth Use During Covid-19

**USE (80%)**

- Internet search for health information
- Telehealth – zoom appointment
- Patient portals
- Mobile apps
- Others – community forums, wearable devices, etc.

**No USE – NO INTEREST (20%)**

- Never heard about eHealth
- Don’t feel they need to use it

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“...I think that COVID-19 impacted us to do telehealth. I don't think that there was really a lot of telehealth prior to COVID-19. I mean, if there was, I was not involved in it or didn't know about it or didn't do it (ID 1010)”

“... I still like the personal touch of talking and being with a doctor as opposed to emailing him back and forth, …” (ID 1023)
Positive Perceptions of eHealth

- No travel, no parking, no driving
- No geographic constraints
- No waiting
- Comfortable and safe
- Easy management of appointments, information
- Enhance health knowledge/literacy
- Patient-oriented care

“The first is what a great idea. I live 15 miles away from my primary care, I’m a widow, and transportation if I was really sick would be difficult. So, the idea that I might be able to communicate with somebody would be helpful.” (ID 1025)

“It’s immediate, I don’t have to wait for my appointment with the doctor, I can just go online and find out what’s going on.” (ID 1008)

“the Portal was my first personal experience... it was amazing actually, it was because I couldn’t get ahold, you call and you have to be on a queue. And so I just was ecstatic. The first time, I was able to write a message directly to my provider on the portal. And I had a written record what I said, and a written record of what they said, and I love that actually a lot.” (ID1017)
Negative Perceptions of eHealth

“...Is the doctor's office going to be staffed? Is the doctor's office going to be paid to take my call and to meet with me one on one? Initially, I don't know. So I might be forced to rely on technology. Because the level of service I've had in the past is no longer there... When you are a patient, sure they say, ‘hey, register here and login here’ and everything else. So it's more sort of forced that way, I think than it is by familiarization” (ID 1013)

“... the patient portal doesn't offer me anything. Why do I need the patient portal? I think the doctors need the patient portal...So my question is, why am I constantly bombarded with using something that the doctors use? (ID 1001)

“Is it a secured site? Nobody else is going to get into this where it’s just doctors, medical team. That's the only thing I worry about.” (ID 1031)

- Poor quality of information and services
- Lack of accuracy
- Inefficient management - easy to forget, delayed responses
- Security concern
- Technology – hard to manage, hard to learn, complicated
- Forced – Provider-centered care
### Facilitators for eHealth adoption

<table>
<thead>
<tr>
<th>Facilitator</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Performance Expectancy</strong></td>
<td>Perception – usefulness, trust, convenience, low cost</td>
</tr>
<tr>
<td></td>
<td>Knowledge – understanding of eHealth, professional background</td>
</tr>
<tr>
<td><strong>Effort Expectancy</strong></td>
<td>Familiarity with technologies, understanding of ICT</td>
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<tr>
<td><strong>Social Influence</strong></td>
<td>eHealth users around (family, friends, &amp; community members)</td>
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<tr>
<td></td>
<td>Encouragements and/or help from others</td>
</tr>
<tr>
<td><strong>Facilitating Conditions</strong></td>
<td>COVID-19; Adaptive technologies</td>
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<tr>
<td></td>
<td>Encouragements/suggestions by health care providers</td>
</tr>
<tr>
<td><strong>New Category (Personal)</strong></td>
<td>Personality: Curiosity, self-motivation</td>
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<td></td>
<td>Needs: Health care needs (health history)</td>
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Barriers to eHealth adoption

- **Performance Expectancy**: Perception – not interested, no benefits, lack of trust, lack of perceived needs, Knowledge – lack of awareness

- **Effort Expectancy**: Lack of confidence in technologies (frustration); Lack of technology education; Difficulties in management (feel complicated, password, not user friendly)

- **Social Influence**: Lack of eHealth users around (family, friends, & community members) Lack of encouragements and/or help from others

- **Facilitating Conditions**: Financial issues, poor internet access, no device; No suggestion/information from health care provider

- **New Category (Personal)**: Prefer in-person appointment; Resistance to technology; Physical and cognitive limitations (vision, hearing, typing, memory, etc.)
Discussions

Multilevel approach is needed to increase eHealth adoption among older adults

- Individual level: improve knowledge on and skills for eHealth
- Interpersonal level: help from family, friends, and community members; peer influence
- System level: old-age friendly system; Recommendations by medical provider

- Old-age friendly eHealth
- along with eHealth training program to increase perceived usefulness and easy of use
- Group training-network among older eHealth users
Thank you!

We appreciate your questions or comments!

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