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Public health advocacy: the vital role of nonprofits in offering technology training to reduce health disparities among seniors communities

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Abstract

The digital divide remains a pressing issue, particularly among elderly communities, significantly impacting equitable access to healthcare services and resources. As technological tools and digital innovations transform healthcare delivery, marginalized populations often face barriers such as limited access to devices, digital illiteracy, and economic disparities. Nonprofit organizations play an essential role in addressing these challenges through public health advocacy and tailored technology training initiatives. This paper examines the efforts of a nonprofit health organization, Partners for a Healthy Community (PHC) in Elysburg, Pennsylvania, to educate seniors on digital healthcare tools and improve access to technology. Key takeaways and future directions are discussed.

Keywords telehealth, digital divide, elderly, non-profits, public health advocacy

Introduction

Today, non-profits play a unique role in strengthening public health advocacy efforts via specialized services and initiatives focused on raising awareness for trending issues and topics, advancing knowledge of the community members, and dissemination of information and resources to those in need (Tulane University, 2020). As a result, non-profit health organizations are essential in public health advocacy, often acting as a voice for vulnerable and marginalized populations amongst some of the most trending issues.

Currently, technological tools and digital access represent some of the most significant and transformative trends shaping healthcare (Li et al., 2021). For example, telemedicine platforms enable patients to consult with healthcare providers remotely, reducing the need for in-person visits and improving access to care for individuals in rural or underserved areas. This trend underscores the critical role of digital innovations in enhancing healthcare delivery and patient outcomes. While telemedicine provides great benefits to many, it also presents several challenges for the elderly, technology illiterate, or low in-income populations (Ezeamii et al., 2024). For example, elderly and/or low-income individuals often lack digital literacy and

often have limited access to necessary technological devices and internet connectivity. Additionally, the rapid pace of technological advancements often creates additional barriers for older adults and low-income populations who may struggle to adapt or afford these innovations (Ezeamii et al, 2024; Zhang, et al., 2021). As a result, there is a need to educate and assist elderly people to ensure equitable access to digital healthcare. The goal of this paper is to explain how a non-profit health organization conducted an initiative to educate and assist the elderly with technological tools and digital access. The remainder of this paper is organized as follows: brief literature review, nonprofit initiative approach, takeaways and informal lessons learned/observed, and conclusion.

Brief Literature Review

Digital Divide

The digital divide is characterized by a lack of knowledge, skills, and abilities, as well as limited access to up-to-date hardware and software. Mubarak and Suomi (2022) conducted a comprehensive review of the literature on the digital divide among the elderly population, often referred to as the "grey" population, within the healthcare sector. Their findings revealed a significant association between the digital divide and disparities in healthcare access, particularly as advanced electronic health technologies (EHT) are increasingly adopted. Those who lack the means or capacity to engage with such technologies are placed at a notable disadvantage. Furthermore, the authors argue that the digital divide is exacerbated by the phenomenon of "rapid aging."

Supporting this perspective, research by Nahm and Son (2020) indicates that rapid aging intensifies the digital divide among older adults. According to their projections, the elderly population is expected to be 100 million by 2035. This trend suggests that the challenges associated with the digital divide are not confined to the present but are likely to escalate as the proportion of older adults within the population continues to grow.

Elderly Populations' Technology Issues

Li et al. (2021) examined the 2019–2020 National Health and Aging Trends Study (NHATS) to better understand elderly's technology use and willingness to learn online during the recent COVID-19 pandemic. Their sample contained 23,547,688 older adults within the United States of America (USA). The data revealed a significant increase in technology use during the COVID-19 pandemic, with a 60.2% increase overall. Despite this increase, the majority of older adults (71.8%) did not report learning a new technology to facilitate online engagement. There was a significant difference ($p < .01$) among the elderly who did acquire new technological skills and those who learned independently or with assistance exhibited a greater increase in technology use compared to those who did not learn new technologies. Specifically, older adults with reduced income levels and education were less likely to engage in self-directed technology learning. Finally, the most concerning result among the dataset was individuals who self-reported fair or poor general health were also less likely to adopt new technologies.

Telehealth and Training

Telehealth refers to the delivery of healthcare services remotely through electronic devices, such as computers, tablets, or smartphones, enabling individuals to receive medical care from the comfort of their own homes. This can include various forms of communication, such as live video or audio consultations, secure messaging with healthcare providers, and the use of remote monitoring devices to track vital health metrics (American Telemedicine Association, 2024). Telehealth is not a new concept, but it has been a trending concept since COVID-19. It is commonly used by doctors who treat chronic medical conditions (Bence, 2024).

A recent study by Ezeamii et al. (2024) conducted a comprehensive systematic review of relevant telehealth studies published across multiple electronic databases and the articles' manual references listings from those studies. It is important to note that most of the studies used within their systematic review focused on chronic disease management. They found a comprehensive list of 24 healthcare studies, published in peer-reviewed journal articles within 2024, where telehealth services impacted patient outcomes and satisfaction in a positive way. Additionally, they also discussed barriers to telehealth services such as technological limitation, digital literacy, disparities in technology access, data security and patient privacy. As a result, they recommend telehealth services incorporate a hybrid approach consisting of in-person and remote visits to help reduce some of the barriers to telehealth services among the elderly and diverse populations.

Similarly, Finkelstein et al. (2023) also believe that technology has amazing potential to aid the elderly as they age in place and note similar barriers such as technology access and digital literacy. However, they partnered with a large organization within New York to provide 35 low-income and mostly diverse participants, averaging 74 years in age, with technology, broadband access, and training for 3 months during the health pandemic. They found that this approach was not effective as there was not an increase in consistent usage. They believe that a personalized training approach which is tailored to individual skills and interests may be more effective

Today, a simple online search yields thousands of online technology training courses for seniors. Thus, many organizations have moved to online training courses because they are cost effective and can quickly educate most young people. However, these online resources are often not helpful for beginners or those using an older version of a technology device or application. Additionally, the abundance of online resources may overwhelm seniors who lack the foundational knowledge needed to engage with technology confidently. Consequently, the effectiveness of these online courses is limited as many beginners may need a more tailored, structured, hands-on, or face-to-face learning environment.

Chiu et al. (2019) conducted a study using a multiple case research method for many purposes including how to better understand teaching strategies used by experienced instructors at senior learning centers. They found in-person instruction allows for direct interaction and provides the opportunity for seniors to ask questions and receive real-time feedback, facilitating a deeper understanding of how to use digital devices. Additionally, seniors can feel more comfortable and confident in an environment where they can physically interact with the devices and practice their skills under the guidance of an instructor and peers. This personalized, hands-on approach has been identified as a critical factor in ensuring that older adults can learn to use technology in a way that meets their unique needs.

Unfortunately, as training continues to go online, more elderly communities face increasing barriers to technology use. Thus, it is essential to recognize the importance of face-to-face technology education for seniors and the importance of non-profit organizations who contribute to public health advocacy by offering face-to-face technology training in hopes to reduce health disparities amongst the elderly communities.

Goal

The goal of this paper is to explain how a nonprofit health organization conducted an initiative to educate and assist older adults with technological tools and digital access. Observational takeaways and emerging patterns are presented. This paper may serve as a foundation for how nonprofits can take the first step in addressing technology challenges among the elderly, as well as guide them in planning future initiatives.

Approach

Partners for a Healthy Community- Elysburg, PA

Partners for a Healthy Community (PHC) - Elysburg, is a nonprofit organization dedicated to promoting wellness and improving public health outcomes within the local community (Deklinski, 2022). Through a collaborative and holistic approach, the organization addresses critical health determinants by providing access to preventive care, health education, and community support initiatives. Its programs focus on mitigating chronic health issues, promoting mental health awareness, and fostering healthy lifestyle choices among residents of all ages. By partnering with local stakeholders, healthcare providers, and educational institutions, the nonprofit creates sustainable frameworks for health equity and addresses disparities affecting underserved populations. With a mission grounded in inclusivity and empowerment, PHC serves as a catalyst for long-term positive health changes in Elysburg and its surrounding areas (PHC, 2024).

The PHC formed a team of five individuals which consisted of two doctors, one medical student, a professor of information technology, and a rising college student interested in the medical field and healthcare technology. The team targeted senior independent living apartment complexes within Pennsylvania with a general population that was above 65 years of age. Upon receiving approval from the senior living apartments, PHC scheduled a one-day workshop. This workshop consisted of presentations from each group member explaining who they are to gain trust from the residents. Once introduced, each member of the team presented on subjects to the general group surrounding technology and healthcare such as ordering prescriptions, accessing patient portals, and internet safety. Each presentation was around ten minutes to keep retention and engage the audience. After the presentations, the audience was self-selected into groups of two to three people. Each PHC team member then worked with the groups individually to teach them how to navigate the internet and healthcare technologies. During these sessions, team members showed residents how to connect their devices to Wi-Fi, search on the web, and access healthcare services through the internet. They also answered any questions regarding healthcare technology.

Results: Takeaways and Lessons Learned/Observed

Participation was voluntary and no survey data was collected. Although no formal data were collected during the workshop, qualitative observations of several key patterns/themes emerged. Specifically, we observed patterns regarding technology challenges and experiences, along with emotional challenges in using technology.

Technology Challenges and Experience

First and foremost, many seniors arrived with outdated or nonexistent personal technology. Hence, the lack of technology availability to the seniors prior to the workshop presented a challenge for them. However, PHC was able to ensure that all participants had a technology device to use through a Scranton Area foundation grant for personal technology devices.

Since many seniors did not have personal technology devices, their technology skills were at the beginner level or that of a novice user. For example, majority of participants needed hands-on assistance with basic tasks such as connecting to Wi-Fi, opening a browser, and/or finding a patient portal.

Among those seniors who did have personal technology of their own, their experience varied. For example, a small number had basic familiarity with digital tools, such as checking email, but most had minimal exposure to electronic healthcare portals or good Internet searching skills.

Our observations are similar to the barriers and challenges previously noted by Anderson and Perrin (2017) and Berkowsky et al. (2015). Specifically, Anderson and Perrin (2017) found older adults often have challenges with technology due to their late-life exposure and a lack of support systems. Berkowsky et al. (2015) found that limited device access and low baseline skills are significant barriers for the elderly.

Emotional Challenges

Overall, fear, anxiety, and apprehension were common amongst many participants as many displayed visible nervousness while navigating touchscreen devices. For example, we observed some participants holding their devices and uncertain of what to do next. Several voiced concern that they might break something by clicking the wrong button, and a few asked the same question multiple times for reassurance. Additionally, hesitation was most evident when participants were asked to engage with unfamiliar interfaces, create login credentials, or accept cookies. Many instantly asked permission before acting. For example, they paused before clicking icons and looked at team members for verbal confirmation.

To decrease the fear, anxiety, and apprehension, we broke down into small groups to allow participants to work at their own pace or for more one-on-one instruction. This helped to contribute to an observable improvement in anxiety and fear, especially when learning was personalized and guided. This allowed us to reframe their mistakes as learning opportunities.

Within a few minutes after our initial small group guidance, many participants began to show signs of a more relaxed and engaged environment. For example, some participants began smiling after successfully completing a task, while others verbalized their relief, joy or excitement. Hence, there was a noticeable shift in body language as we further observed participants looking to each other for affirmation, help, or shared accomplishment.

Overall Results

By the conclusion of the workshop, participants not only demonstrated increased familiarity with technology but also exhibited reduced anxiety, fear and apprehension when using personal technology devices to search the Internet, and access their healthcare portal. In fact, several participants expressed joy in completing tasks they had previously found intimidating, such as navigating to their patient portal, or simply connecting to Wi-Fi without assistance. These accomplishments, while modest in technical scope, represented meaningful results in overcoming technical and emotional challenges of technology .

Discussion

Our takeaways are very similar to the results of Castilla et al's (2018) general study which conducted eight face-to-face technology training sessions to explore the effectiveness of a linear navigation-based social network system as a digital literacy method for elderly individuals in rural areas. They also tried to address barriers such as limited telecommunication infrastructure and unfamiliarity with non-linear technology tools. However, their research involved 46 participants (60-76 years of age) who were slightly younger than participants in our study and had varying levels of technology experience. They also found emotional challenges such as fear and anxiety were prevalent but subsided with continued technological interaction.

Our observations are also consistent with additional research findings suggesting older adults frequently experience technology-related anxiety due to unfamiliarity and a fear of irreversible errors. As a result, older adults benefit from social, face-to face interactive learning (Charness & Boot, 2009; Xie et al., 2012). Similarly, Chiu et al. (2019) found, in-person learning environments allow for direct interaction, immediate feedback, and real-time problem-solving.

While the COVID-19 pandemic prompted a shift towards online training formats, our experiences and observations lead us to agree that older adults need and value of face-to-face technology training. We argue that seniors often feel more comfortable and confident when they can physically engage with devices and receive personalized guidance in a supportive, hands-on setting. These interpersonal dynamics not only reduce anxiety, but also foster a sense of community and empowerment among older adults. Hence, the involvement of nonprofit organizations, like PHC, is not only beneficial, but vital in helping seniors develop the technology skills needed to access healthcare technologies.

Conclusion

Non-profit healthcare organizations can help aid in addressing and diminishing technological public health disparities amongst marginalized and vulnerable elderly populations. This paper provided a literature review which highlighted the critical need to bridge the digital divide among elderly populations, emphasizing how technological advancements, while transformative, can also create significant barriers for those lacking access or literacy. Additionally, this paper provided information on an approach initiated by PHC for educating older adults on healthcare technologies. The findings from this initiative, though qualitative, align with previous research by Chiu et al. (2019) who also indicated that hands-on, tailored instruction fosters greater confidence and engagement with technology among seniors. The lessons learned/observed underscore the importance of addressing emotional and logistical challenges, such as fear, outdated devices, and varying levels of digital literacy, to ensure equitable access to healthcare innovations.

This research has practical impacts for non-profit healthcare organizations, practitioners, volunteers, and future authors as it serves as a starting point to navigate the challenges associated with digital healthcare access and offers practical guidance for advancing public health advocacy in the digital age. Furthermore, it is the authors' hope that by this paper serves as a foundation for non-profits and healthcare providers to begin to develop more robust frameworks to reduce health disparities and promote digital inclusivity among aging populations.

It is important to note that this paper is not without limitations. First, it is limited to a literature review, an example approach and lessons learned/observed within a non-profit healthcare organization. Additional approaches may provide additional lessons learned/observed. Furthermore, additional types of organizations may have monetary resources to add to the approach. Second, as stated above, we did not collect data. Third, our interactions are limited to one-day workshops. Third, our work is limited to geographical locations and facilities. Secondly, this study is based on a literature review rather than gathering empirical evidence for analysis. Accordingly, the approach lacks some rigor in validation of the approach. Data collection on this approach is recommended to apply and gauge the participants' comprehension of the training. Third, this study was limited to a small geographical area in Pennsylvania. Expanding the geographical area may also provide additional lessons learned/observed. Additional future research studies should address the limitations described above and reevaluate the content as needed. We also suggest that additional research should adapt Castilla et al's (2018) data collection method of using the technology acceptance model (TAM) to measure impact nonprofits technology training towards reducing health disparities among the elderly communities. Finally, we also suggest that additional research be conducted on elderly minority comfort levels regarding a health portals's data security and privacy. In conclusion, this paper has practical implications for non-profits and healthcare providers as it serves as a foundation in the first step to navigating the technology challenges among elderly, as well as a guide to where to go next.

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