Student Veterans' Willingness to Use Telehealth for Mental Health Services

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Abstract

Objective: With the increase in recent number of mental health problems including PTSD, depression and substance abuse in veteran population, there is an increased need for effective mental health services. According to the US department of Veteran Affairs, as a veteran who has been honorably discharged, he or she can have veteran medical insurance for free lifelong, which allows them to go to any VA hospitals for free for any services that are provided there, including telemedicine. The aim of this study was to assess if student veterans are willing to utilize telemedicine for behavioral health services, and if not, what were the factors that influenced their decisions and opinions about telemedicine.

Method & Participants: Online anonymous survey which was distributed randomly to student veterans. Quantitative data was collected and analyzed by Microsoft Excel. Subjects were selected based on inclusion and exclusion criteria stated in the study. Subjects were asked to complete the survey which lasted approximately 5 mins and were also given the opportunity to watch a video which educated them about telemedicine.

Results: The survey was sent to 150 student veterans and was completed by 74 students (n=74). Age, gender, and ethnicity showed to play an important role in student veterans' willingness in using telehealth. More than 50% of subjects claimed that they were not sure if the service was covered under their current insurance. In total, 80% of the respondents who never used telemedicine showed interest in utilizing telehealth whether they had been aware of it or not. In terms of future interest and telehealth promotion, 75% student veterans responded "definitely will" to not only the question on using telehealth again, but also to that of recommending telehealth to their friends and family.

Conclusion: This study found that making student veterans aware of telehealth services yielded a strong correlation in the willingness to use the service in the future. Subjects also reported a high degree of satisfaction with telemedicine and a willingness to participate in telemedicine clinical care in the future. This survey also provided knowledge for the participants as those who were not aware were educated via a video. Questions presented in the survey after the video revealed a positive feedback in the willingness to use telehealth in thefuture.

Keywords: Mental Health, Antibiotic, Illnesses, Healthcare, Telemedicine

Significance

Mental health illnesses have recently become a dominant, widespread issue within the past few decades. Its impact affects not just an individual's emotional well-being but can also have a crippling toll on one's physical health, career, education, and relationships. Even though there has been an increase in public acceptance and awareness of mental health issues, the unfortunate truth is that a stigma still exists, which may dissuade an individual from even seeking mental health services. The fear of being seen in a mental health office by a loved one or friend may also be another factor. One of the complex aspects associated with mental health illnesses is that it cannot be readily seen or treated as a physical health issue. Mental health treatments, such as therapy or medications, do not work quickly as an antibiotic regime. Instead, they often can take a long period of time, if not lifelong, and may also require a great deal of time before even small changes come into effect, if at all. Such factors may be even more burdensome for student veterans, especially if there are long waiting times, extra financial costs, or lack of healthcare resources.

Despite the surge in mental health illnesses, recent healthcare reform and technological advancements have facilitated healthcare access to patients who were previously obstructed by physical and financial limitations. One key demographic group in particular is veterans, especially with the high risk of potential physical and emotional

injuries. According to the National Veterans Foundation (2016),

> Approximately 18.5 percent of U.S. service members who have returned from Afghanistan and Iraq currently have post-traumatic stress disorder or depression. Only 50 percent of returning vets who need veteran mental health treatment will receive these services.

The data warrants the need for increased accessibility and wider array of mental health options for veterans, especially those who are also students. The downsides associated with office visits, such as long wait times and lack of VA facilities, will only deter student veterans from seeking and utilizing mental health services if such issues are not addressed. Targeted interventions are required to reach out to patients to address needs for care currently unmet by the health care system and to reduce negative effects of the health care experience (Virgo et al., 2006).

Recent legislation seems to have established a practical answer to the problem. A new federal rule permits VA doctors, nurses, and other health-care providers to provide care to veterans using telehealth, or virtual technology, including when care will occur across state lines or outside a VA facility (Office of Public and Intergovernmental Affairs, 2018). The ability to use telemedicine for mental health services would reduce some of the financial and timely costs associated with face-to-face office visits, which in return, would save time and money for student veterans as well as VA facilities. It may also diminish the emotions produced by stigmas and/or fears associated with the risk of being seen in a mental health office by a friend or loved one. Although the advantages are numerous, it would be presumptuou s to assume that student veterans would inevitably use telemedicine just because it exists.

Nature of the problem

With the advantages of telemedicine also come the disadvantages, which may refrain veterans from utilizing it. One reason could be the risk of a breach of sensitive information discussed during a virtual visit. The need for a secure internet connection may not be available and/or affordable for all individuals. Another possibility could be demographic factors, such as age and gender. For example, older generations may be reluctant to use telemedicine if they believe that electronic platforms, such as a telemedicine server, require users who are tech- savvy. Considering both the advantages and disadvantages of telemedicine, one important question that stands to be answered is whether student veterans are willing to use telemedicine for mental health services. The aim of this study was to assess if student veterans are willing to utilize telemedicine for behavioral health services, and if not, what were the factors that influenced their decisions and opinions about telemedicine. It is crucial to determine what barriers may prevent student veterans from utilizing telemedicine in order to understand if telemedicine is a practical resource in treatment of mental health problems for this specific population.

<div align="center">Background</div>

In 1959 , the University of Nebraska's Psychiatric Institute started the first ever video- based psychiatric consult. They used televisions to link large medical centers to remote rural areas as well as other areas of the university. With limited technological support, the use of telemedicine did not reach its full potential until the 2000s. Better internet access played a very important role in the increased interest in telemedicine, along with convenience, cost effectiveness, and its acceptance by the community. It has been reported that 55% of US counties are unable to recruit mental health practitioners (Chan, Parish & Yellowlees, 2015). Shortage of mental health providers and services, as well as increased public and private funding, has also led to the boom for telemedicine. Thus, use of telemedicine seems to be an excellent resource in tackling this problem.
The Veterans' Health Administration (VHA) is the largest integrated health care system in the United States, with 1243 health care facilities and over 9 million veterans enrolled in the VA health care program (Veteran Health Administration, 2018). With many service members returning from combat zones, there is a high need for mental health services in this population. Individuals exposed to traumatic events, such as war, rape, or natural disasters, are prone to develop mental health conditions, such as post-traumatic stress disorder (PTSD), depression, anxiety, substance abuse, etc. They would not only experience flashbacks, bad dreams, and freighting thoughts, but also have an increased likelihood of engaging in harmful behaviors, such as tobacco, drugs, and alcohol misuse, which can increase their risk of mortality. These conditions may not only affect the individual, but can also have an impact on their families and friends.

According to the 2019 National Veteran Suicide Prevention Annual Report, provided by Office of Mental Health and Suicide Prevention in 2017, the suicide rate for veterans was 1.5 times the rate for non-veteran adults, after adjusting for population differences in age and sex, with a marked increase following the wars in Iraq and Afghanistan. A large randomized control trial study published in Lancet Psychiatry (2015), which looked at the use of telemedicine for depression in older veterans, showed that use of telemedicine is feasible and produces

outcomes that are no worse than in-person delivery over a 12 month period. Depression is very common in veteran population, with substantial depressive symptoms 2-5 times more likely than in their civilian counterparts. Depression is common in suicidal individuals, and suicide rates in older adults are disproportionally higher compared with the rest of the population. Effective treatment of depression in older adults includes some specific forms of psychotherapy and pharmacotherapy, most notably selective serotonin reuptake inhibitors. Cognitive behavioral therapies are the most recommended forms of psychotherapy for depression because of their simplicity and cost-effectiveness. Also, cognitive behavioral therapies do not possess the risk of significant side effects and other drug interactions, which can be common in older individuals using pharmacotherapy. In this study the subjects were randomly assigned (780 patients in total) (1:1) to one of two study groups delivering behavioral therapy for depression: telemedicine and same-room treatment. Patients had 60-minute sessions about once a week. The intervention group received therapy via videophone, whereas the control group received face-to-face therapy. The study showed that this method was feasible and produced outcomes that were no worse than in- person delivery 12 months after treatment. Participants in both groups tolerated and clinically benefitted from behavioral activation for depression. (Egede et al., 2015). Along with the ones mentioned above, another mental health condition that has higher prevalence in veteran population is PTSD. According to Fortney et al.(2015),

The prevalence of PTSD in the general populationis at about 3.5%. PTSD rate is at 9.2% overall in the VHA health care system and it increa ses to around 23.8% in veterans who served recently in hag and Afghanistan.

Reisman(2016) states,

> There is a higher prevalence of PTSD in surviving military members than in conventional fighting, due to the urban-style warfare tactics in Afghanistan and hag marked by guerrilla attacks, roadside improvised explosive devices, and the uncertain distinction between safe zones and battle zones.

According to Dr. Paula Schnurr, the Executive Director of the VA National Center for PTSD, " Between the way we're protecting the troops and responding to injuries on the ground, a lot of soldiers are surviving with very significant injuries who would not necessarily have survived before" (as cited in Reis man, 2016). As more survivors came back from the battlefield than ever before, PTSD encounters have increased compared to the veterans from the earlier wars in the 20th century.

The VHA has been successful in diagnosing and treating PTSD within its population with the use of psychotherapy and pharmacotherapy, but the stigma and geographic barriers prevent rural veterans from utilizing these helpful interventions. The VHA has adopted the use of telemedicine in treating veterans in the past and many studies have recognized its effectiveness. A four-year long large-scale clinical assessment study of 98,609 mental health patients was published in an official journal of the American Psychiatric Association. The study assessed mental health patients before and after enrollment in telemental health services provided by the US Department of Veterans Affairs, and found that after initiation of such services, patients' hospitalizations decreased by an average of approximately 25% (Godleski, Darkins, Peters, 2012).

A study conducted by Fourtney et al. (2016) examined the effectiveness of telemedicine- based collaborative care model in rural veterans in comparison to the usual care they received without the use of telemedicine for the treatment of their PTSD. The study' s results showed that patients who were randomized to TOP (Telemedicine Outreach for PTSD) had significantly larger decreases in Posttraumatic Diagnostic Scale scores at the 12-month follow up, when compared with patients who received the usual care. Thus, they concluded that the telemedicine outreach for PTSD, or TOP, is an effective way of providing mental health services to the veteran population.

Even with a number of evidence-based positive outcomes of telemedicine for veterans, there are several barriers that deter its utilization. Kruse et al. (2018) discussed the factors influencing the adoption of telemedicine for treatment of military veterans with post-trauma tic stress disorder. The researchers identified five barriers to telemedicine usage: access to technology, technical complications, physician availability, negative patient perception, and uninformed patients. Many individuals expressed confidentiality concerns and limited confidence in the effectiveness of telemedicine as some of the reasons for their negative perception of telemedicine. Along with these concerns, logistics related to technology such as complicated installation of software, affordability or lack of high-speed internet, as well as high upfront cost needed for equipment may also act as barriers for the implementation of telemedicine. By identifying these concerns, healthcare providers and policymakers can target these specific barriers and work to solve these issues.

A recent study by Stoll, Muller, & Trachsel (2020) looked at some of the ethical aspects on the use of telemedicine for mental health services. The researchers identified 249 publications on 3 different databases (PubMed,PsycINFO, Web of Science) that discussed ethical issues regarding online psychotherapy and identified 24 ethical arguments in favor of online psychotherapy and 32 against it. According to the study, the

top five ethical arguments in favor of online psychotherapy were:(1) increased access to psychotherapy and service availability and flexibility, (2) therapy benefits and enhanced communication, (3) advantages related to specific client characteristics (e.g. remote location), (4) convenience, satisfaction, acceptance, and increased demand, and (5) economic advantages. The top 5 ethical arguments against engagement in online psychotherapy were: (1) privacy, confidentiality, and security issues, (2) therapist competence and need for special training, (3) communication issues specific to technology, (4) research gaps, and (5) emergency issues. The findings from the respective study can be helpful to medical providers on deciding whether to use telemedicine, how to inform patients about risks and benefits of telemedicine, and refine ethical guidelines. Our study takes some of the previously mentioned studies further and focuses on the willingness of student veteran to use telemedicine for mental health conditions.

Methodology

Design
The research design utilized qualitative measures to understand veterans' willingness to use telemedicine for mental health services, and whether telemedicine can increase the rate of seeking mental health services than the rate of traditional way of physician visits. An online anonymous survey was distributed and collected by Research Electronic Data Capture (REDCap). Data analysis was completed and analyzed through Microsoft Excel.

Subjects
The participants included veterans from the ages 18 to 54, enrolled at New York Institute of Technology (NYIT) regardless of their major. Inclusion criteria were limited to veterans who are currently studying at NYIT. Exclusion criteria included those: (a) who are not current students at NYIT, (b) who do not have access to computers or the internet.

Procedures
An anonymous survey consisting of 18 questions was first peer-reviewed and validated, after which it was created and tested multiple times on the REDCap to ve1ify the correct order and contents. REDCap is a secure web platform for building and managing online databases and surveys. Permission to survey participants was granted by the NYIT Director of Military and Veterans Affairs, after receiving NYIT Institutional Review Board (IRB) approval to conduct this study.

Investigators used Microsoft Excel to analyze data, which was stratified by age, gender, education level, as well as other categories.

Instruments
Investigators modelled the peer-viewed and validated survey from a previously published study on telemedicine with permission (Green, 1999), constructing the survey to address subject's perceptions about telemedicine. Using the Dephi method this survey measured participant's willingness by evaluating 4 components: (a) demographics, (b) awareness of telehealth, (c) experience and satisfaction with telehealth, (d) future use and concerns with telehealth.

Assumptions
This research design assumed: (a) no bias on patient selection criteria, (b) all participants will understand what is asked and answer honestly, (c) the participants are good representatives of the student veterans in enrolled in college.

Limitations
Student veterans tend to be of younger populations compared to the general veteran population. The generational differences may afford an easier incorporation of technology for younger students than an older veteran population. Therefore, the results may only be able to represent veterans in a certain age group.

Student veterans who are seeking mental health might take up a smaller portion in the NYIT student body, compared to those in the general veteran population. This may result in a conclusion that underestimates the use of telehealth in mental health services.

Although the survey has been designed to accommodate most students' time schedules, the incentive might not be motivating enough to draw student's attention and fill out the survey.

Results

Demographics

Surveys were sent to 150 student veterans enrolled in NYIT New York and Long Island campuses, and completed by 74 (49%). All responses met the inclusion and exclusion criteria and were used in data analysis using Microsoft Excel.

　　　The age, gender, and ethnicity showed to play an important role in student veterans' willingness in using telehealth to manage their mental health. Out of 74 respondents, 57 (76.5%) were males (figure **1),** and average age was 30.9 with over 50% fell in the group of 25-34. The self-defined ethnicity of the student veterans distributed nearly equally among Caucasian, Hispanic, African American (figure 2).
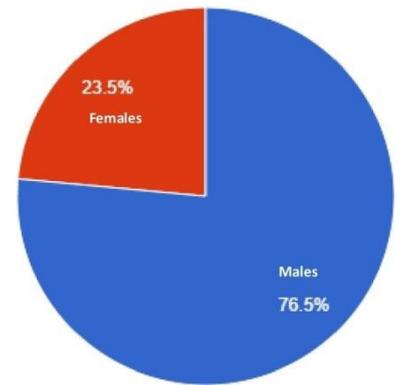

Figure 1: Gender Distribution in survey participants

■ **Caucasian** ■ **Asian** ■ **African American**
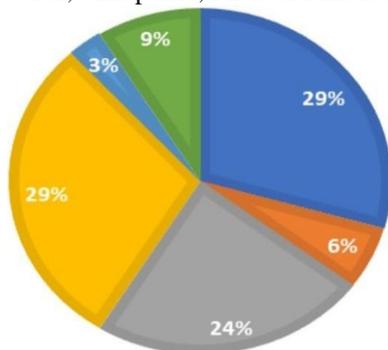**Hispanic** ■ **Native American** ■ **Other**
Figure 2: Ethnicity distribution

The majority of the responders are currently pursuing their Bachelor's degree (figure 3).

　　　The major area of studies included information technology (3%), computer science (3%), electrical engineering (10%), mechanical engineering (10%), media and art (9%), management (22%), interdisciplinary studies (6%), and medicine (25%) (figure 4)., out of over 90 undergraduate, graduate, and professional programs (Academics). The major "management" included urban administration, hospitality management, supply chain management, engineering management, and business management. Two responses were eliminated due to invalid information.
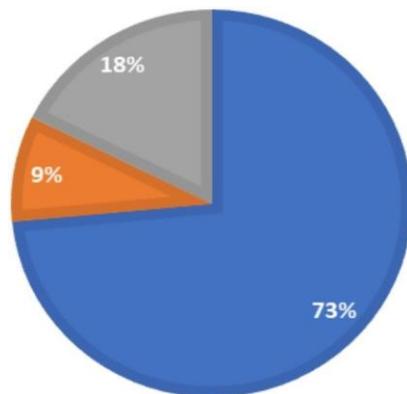

Bachelor's degree ■**Master's degree** ■**Doctorate degree**
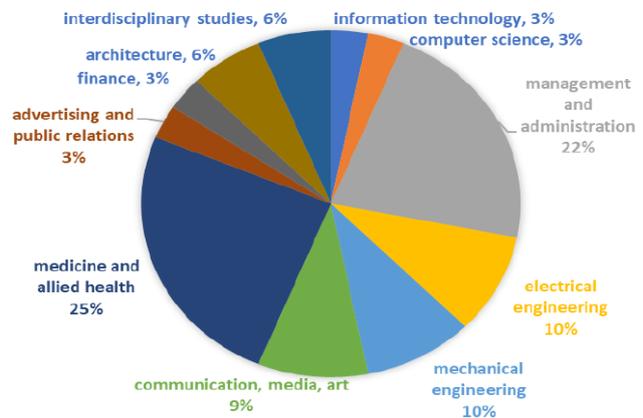**Figure 3: Degree plan distribution**

Figure 4: Major Distribution

Awareness of Telehealth

Among 74 participants, 65 of them (88.2%) had never used telehealth for mental health services, and 50% of them were aware of the service. For these student veterans who knew about it, 86.7% would like to use it. The reason that they had not utilized it yet (over50%) was reported to be because they did not need it for mental health visits. Other reasons included "lack of access to technology" (15.4%), "preference for in-person interaction" (15.4%), "technical complication"(7.7%). A small percent of respondents chose "other" and responded "recently heard of it" and "had not learned but may use it when time comes." Only a few of the respondents who were aware of telehealth but never attempted to use it because they "prefer in-person interaction."

　　　On the other hand, almost 50% of student veterans were not aware of telehealth and had no knowledge about this technology. As part of the survey, a video link to the Veteran Affairs website about what telehealth is and how it works was provided to the participants. After they learned about the service, 73.3% replied "willing to use it in the future" while 8 people still would not consider telehealth as their medical visit method. A handful of respondents who were not willing to use telehealth stated in the survey that they were still not sure if it's "covered by their insurance," whether had VA benefits, or covered by parents' insurance. In total, 80% of these respondents showed interest in utilizing telehealth either they had been aware of it or not.

Experience and Satisfaction with Telehealth

Given a check-all-that-apply list of 5 possible reasons to use telehealth with 1 being "other", 50% of the participants with previous experience checked "Little/no travel needed" and "satisfied with previous telehealth visit." 25% students liked it because of "Shorter/no wait".

One chose "other" and answered "flexibility" as the reason to use telehealth. Another answer under "other" mentioned the reason to use telehealth was to monitor high blood pressure at Veteran Affairs hospitals. It was eliminated because it was out of the scope of this study.

Record ID	A	B	C	D	avg
Ease of seeing the images on the monitor	4	5	5	5	4.75
Ease of hearing and seeing the remote practitioner	4	5	5	5	4.75
The quality of health care you received	5	5	5	5	5
Convenience of using the telehealth service	5 L 5	5 L 5	5	5	5
Your overall level of satisfaction with telehealth experience			5	5	5

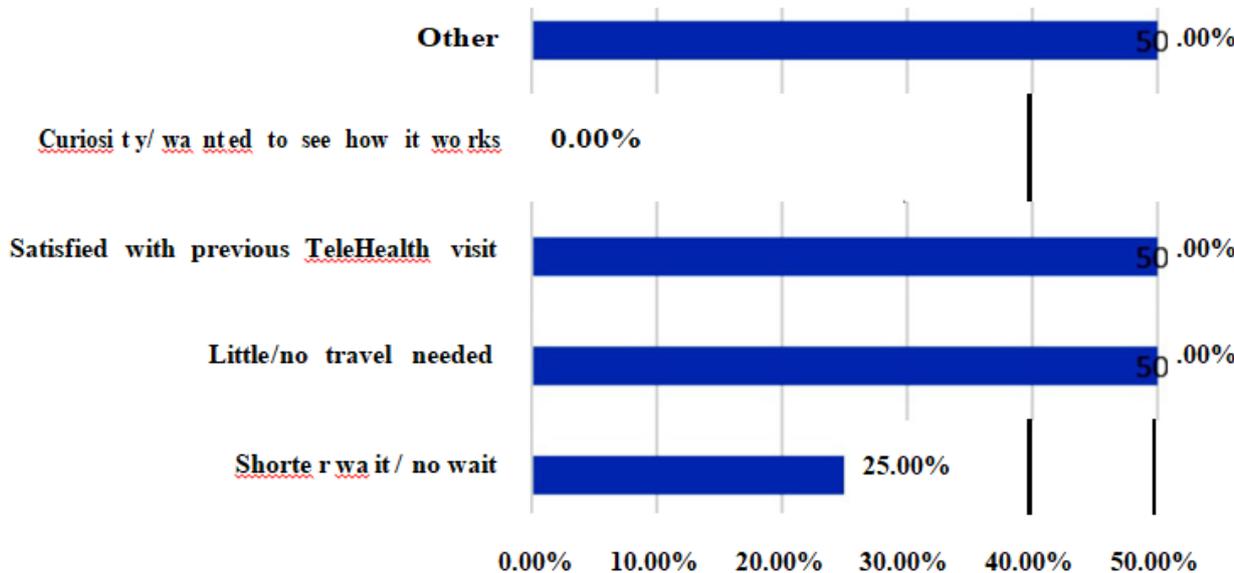**Table 1: Survey participants' satisfaction with previous telehealth experience**

Figure 5: Reasons to choose telehealth given by participants
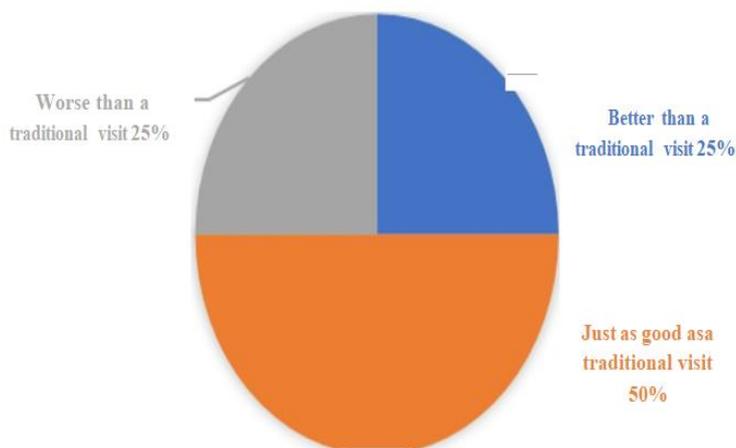

Figure 6: Telehealth visit vs In-person medical visit

Five different aspects of satisfaction with previous experience with telehealth were presented to participants on a 5-point Likert Scale. 100% responded 5/5 on "the quality of health care you received", "convenience of using telehealth service", and "overall experience with telehealth". "Ease of seeing the images on the monitor" and "hearing the remote practitioner" each received an average of a 4.75/5 satisfaction rate (table 1).

When being asked about how telehealth experience was compared to the traditional in-person medical visits, 25% agreed to "better than a traditional visit" while 25% disagreed and chose "worse than a traditional visit." Half of the respondents considered it "just as good as a traditional visit" (figure 6).

Future Use and Concerns with Telehealth

In terms of future interest and telehealth promotion, 75% student veterans responded "definitely will" to not only the question on using telehealth again but also that on recommending telehealth to their friends and family. 25% responded "probably will" to both quest ions. An open-ended question was asked at the end of the survey for any special experience with telehealth that the respondent would like to share. One commented that telehealth improved the communication between doctors and patients which in tum simplified the medical visit process. Two out of three agreed on the priceless convenience that this new technology brings. However, one of them thought that it is the nature of mental health service that made it most convenient, and therefore it is not recommended for every service.

Discussion

This study was created to assess student veterans' willingness to use telehealth for mental health services. Overall, the study accomplished to answer the hypotheses. This study was limited in that it focused on the willingness of veteran students only among enrolled NYIT students.

Awareness of Telehealth

More than 50% of veteran students who filled out the survey claimed that they were not sure if the service was covered under their current insurance. In fact, a veteran who has been honorably discharged, is eligible to receive lifelong veteran medical insurance for free, which allows them to go to any VA hospitals for any services that are provided there, including telehealth (United States Department of Veteran Affairs, 2020)

The researchers concluded that making student veterans aware of telehealth services yielded a strong correlation in the willingness to use the service in the future.

The participants who were not aware of telemedicine were provided with an educational video on telemedicine, after which 73.33% of these participants said they would be willing to use it while 26.67% stated otherwise. Out of the students who were not willing to use it, 75% stated they didn't feel their insurance covered telemedicine care. Accordingly, some student veterans are not aware that VA insurance covers telemedicine visits. Information is readily available on the VA website about the coverage of telehealth, showing that reinforcing that information to veterans is key for the future of telehealth usage.

Educating our audience on telemedicine via video proved that if veterans are aware of the benefits of telemedicine, they will be more willing to use it. After the educational video, 73% of the respective participants who were not interested in telemedicine services changed their minds, and said that, after watching the educational video, they are now willing to use the services. This explained that many student veterans were not aware of what telemedicine is, and hence, were not willing to use it. As the survey demonstrated, student veterans' awareness of the benefits that telehealth offers created an overall open-minded approach.

Demographics and Willingness to use Telehealth

Ages

The study displayed how different ethnic groups, age, and gender play a role in telemedicine access. One of the hypotheses was that younger age populations would be more aware of telemedicine. However, the results revealed otherwise. All of the18-24 age student veterans were not aware of what telemedicine was. On the other hand, the older age student veterans were more aware of telemedicine; predominantly the 25-34 years of age range.

Ironically, those who were not willing to use telemedicine services were all in the range age of 25-34 (the group that is most aware of telemedicine services). Since over 75% of respondents identified as male, gender correlations were not performed.

Ethnicity

Ethnicity played a role in who sought telehealth before. In our survey, those that self identified as Caucasian and Hispanic were the highest race surveyed. Those that identified as utilizing telehealth services before the 50% self identified as African American and 50% self identified as Hispanic. Therefore, it can be inferred that those who identify as African American and Hispanic are more proactive about seeking telehealth services than other ethnicities surveyed.

Why Telehealth?

Reasons for Satisfaction

Those who did use the service, or were willing to use it, stated that they like the convenience of it, whether it is little to no wait time, flexibility, no travel needed, or satisfaction on a previous visit. According to a JAMA study (2017), the average VA wait time to get an appointment with a provider was 17.7 days (USDVA, 2019).

Furthermore, the average wait time while at doctors' offices was 18 minutes and 13 seconds. Telemedicine offers same-day service without the wait. It is flexible and traveling is not needed as visits can be accomplished through the comfort in one's home. Some participants voiced that telehealth is the new way of providers helping patients with mental health needs. Most mental health services are easily accomplished through telemedicine because physical exams are usually not necessary during these visits. Most visits are for prescription renewals or psychotherapy sessions.

Telehealth vs In-Person

Telehealth interactions are convenient and cost effective. A study done by Powell et al.(2017) succeeded in interviewing 19 out of 32 participants on patients' perceptions on telehealth. In their study, patients reported overall satisfaction with video visits, with the majority of them wanting to continue the service. According to the study , "some patients felt more comfortable with video visits than office visits and expressed a preference for receiving future serious news via video visit, because they could be in their own supportive environment"
(Powell et al., 2017). Convenience and efficiency were benefits that participants expressed. The drawbacks were privacy and questioning the providers' ability to perform adequate physical examination. Similarly, this study showed that convenience was the main benefit that attracted the participants in the willingness to use telehealth. According to Powell et al., adequate physical examination was one concern for patients using telehealth. However, in this study, the main concern was student veterans' lack of information on their telehealth insurance coverage.

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