

Identifying and validating requirements of telemental health services for Iranian veterans

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ABSTRACT

Background: The ability of timely access to mental health care is very important for combat veterans that are facing many barriers such as living in rural and remote areas and the lack of integration. Telemental health services improve the veterans' health situation by providing mental health care from a distance. We aimed to identify the telemental health service requirements for Iranian veterans and validate them from the perspective of the statistical population. **Methods:** This descriptive cross-sectional study was conducted in 2018. In the first phase, a review was conducted in relevant databases, such as PubMed, Scopus, Ovid, Ebsco, and Web of Science. In the second phase, veterans, mental health providers, and telemedicine experts were consulted to validating of the identified telemental health service requirements by a researcher-made questionnaire. Analysis of collecting data was done using SPSS software. **Results:** By full-text reviewing of 15 related articles, the identified elements were justified in 2 main categories and 24 subcategories including telemental health services (17 items) and telemental health requirements (7 items). According to the findings, the highest score was related to "save health-care costs" (4.47) and "reduce transportation-related problems" (4.47). Moreover, the "feasible alternative to face-to-face care" (2.22) obtained the lowest score from the perspective of the statistical population. **Conclusion:** Due to the importance of accessibility and patient-based mental health services, more studies are needed to investigate the point of views of patients and specialists to better understand the concerns and barriers to the implementation and use of telemental health services.

Keywords: Requirement, telemedicine, telemental health, telepsychiatry, veteran

Introduction

War is one of the factors affecting the prevalence, onset time, and course of mental-behavioral disorders.^[1] Previous studies have shown that both war and stress-induced physical conditions affect the mental health of war victims.^[2,3] The Iran–Iraq War was an

armed conflict between Iran and Iraq, beginning on September 22, 1980, when Iraq invaded Iran and ending on August 20, 1988 and its consequences have led to psychological disorders as a common problem among warriors, veterans, and their families.^[4] Studies show that survivors of war and their families suffer from a wide range of mental disorders such as posttraumatic stress disorder (PTSD), mood disorders and anxiety, aggression, conflict, and depression.^[5,6] According to the Mental Disorders Research Center of the Foundation of Martyrs and Veterans Affairs, more than 85% of the participants in the Iran–Iraq War has psychological symptoms of PTSD.^[7]

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In recent years, concerns have been raised about access to mental health services, especially for veterans in remote areas.^[8,9] For many veterans with movement limitations, factors such as distance and time are major barriers to accessing mental health services.^[1,10] Currently, the advancements in information and communication technologies have revolutionized the methods of providing health services to veterans.^[11,12] Over the past decade, various aspects of telemedicine programs have been implemented to improve the access of combat veterans to health care around the world.^[13] Providing mental health care using telemedicine technology is an appropriate solution to increase access to services needed by veterans.^[10,14,15]

Telemental Health (TMH) is one of the most popular and most successful telehealth programs.^[16,17] Due to the simplicity and widespread application of this technology, it has the largest part of telemedicine and can improve the coordination between physical and behavioral health services.^[18,19] TMH is a general description of the situation that the physician uses a broad area of technologies to provide mental health services to people living in rural and underserved communities.^[19,20] TMH consists of three areas of telepsychiatry, telepsychology, and telebehavioral health.^[13,20,21] Delivery methods of TMH services is possible in both synchronous and asynchronous ways through various forms of telecommunications technology, including email, social networks, web-based intervention, telephone, and video conferencing.^[9,13,22]

In-person services for veterans from health-care centers have many psychological pressures, and sometimes, it is as a barrier in their face-to-face treatment. TMH programs can significantly reduce these pressures and facilitate access to health-care and education services.^[21-23] Many proofs indicate to high levels of patients and health-care satisfaction of TMH services.^[12,24] The findings of similar studies showed that the clinical outcomes of the use of TMH in relation to traditional face-to-face care were significant.^[21,25] These documents show that the use of TMH programs for health-care services for veterans can significantly reduce financial and time costs.^[26,27]

Aim

However, in Iran, as a country that has many veterans, there have not been any studies on the use of TMH services for combat veterans. The aim of this study was to identify the TMH service requirements and validate them from the perspective of the statistical population.

Materials and Methods

This descriptive cross-sectional study was conducted in two main phases in 2018. In the first phase, a review was conducted in relevant databases, such as PubMed, Scopus, Ovid, Ebsco, and Web of Science. The keywords used to search for resources were as follows: veteran, combat veteran, TMH, telepsychiatry, telehealth, E-mental, E-health, telemedicine, and requirements. The following criteria were considered for selecting the studies

related to TMH requirements: (1) type of a study: the research papers and review articles were selected, and newspapers, reports, editorial letters, and abstracts were not examined; (2) date of publication: the articles published between 2010 and 2018 were reviewed; (3) language: only documents published in English were examined; and (4) keywords in the title or abstract: as the keywords could be found in different papers as general terms, only full-text studies with the keywords in the title or abstracts were selected.

By reviewing and using the information obtained from the review of 15 similar articles,^[1,3,5,6,9,10,12,15,17,19,21,27-30] requirements of TMH services were identified and a questionnaire was developed for the validate necessary TMH services. The questionnaire consisted of 2 parts and 29 questions, including demographic information (5 questions), and identified TMH service requirements (24 questions), which were based on the 5-point Likert scale (very much, much, no idea, low, and very low). The content validity of the questionnaire was measured by six experts in health information management and medical informatics affiliated with Tehran University of Medical Sciences. In order to collect data and increase the number of participants in the study, face-to-face meeting approach was used. To ensure the reliability of the questionnaire, it was completed by 15 of the statistical population; they were requested to complete the questionnaire for the second time in 1 week. The collected data were analyzed with SPSS (Version 21) and the reliability of the questionnaire was calculated 0.89 by Cronbach's alpha.

In the next phase, the statistical population was asked about the TMH service requirements using a researcher-made questionnaire. The statistical population consisted of 3 groups and 158 people. The first group consisted of 82 combat

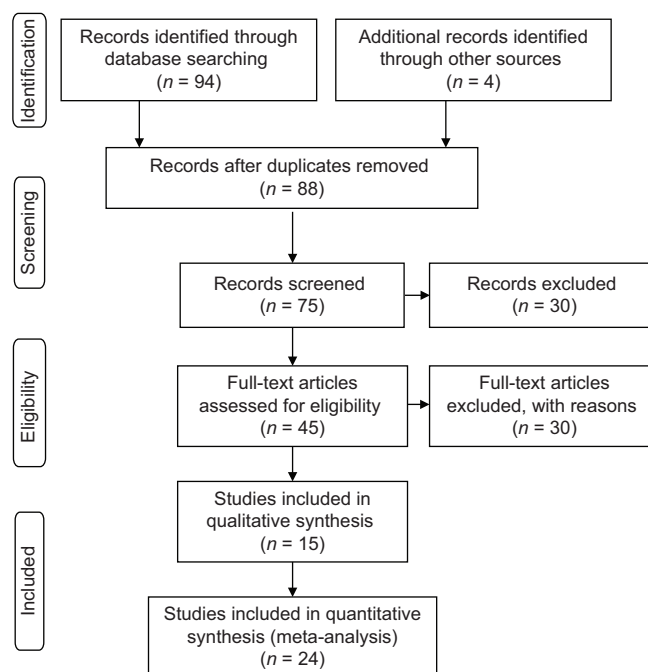


Figure 1: Search results from different databases

veterans who were referred to veterans' psychiatric hospitals in Tehran (Niayesh and Ayatollah Sadr Hospitals). The second group included 31 mental health professionals (psychiatrists and psychologists) working in these hospitals. The third group consisted of 45 telemedicine experts (health information management and medical informatics specialists). Collected data were analyzed using SPSS statistical software (version 21) and descriptive statistics (frequency distribution and mean reports). TMH services in the questionnaire were scored from 1 to 5 (5 for very much, 4 for much, 3 for having no idea, 2 for low, and 1 for very low), and each of the items that had obtained at least a mean score of 2.5 or more was considered as necessary TMH services. Furthermore, about the identified TMH requirements, items will be validated that was assigned a score higher than 50%.

Results

Using the search strategies, 98 references were retrieved, and finally, 15 papers that published between 2010 and 2018 were thoroughly surveyed [Figure 1].

By full-text reviewing of selected articles, we determined the requirements of TMH services in 2 categories: TMH services (17 items) and TMH requirements (7 items). Table 1 shows the identified TMH services and requirements.

TMH services and requirements were scored by 146 samples of a statistical population (the response rate was 92.4%). According to the findings, 15 items were selected for the TMH services. In this section, "save health-care costs" and "feasible alternative to face-to-face care" had the highest and lowest mean

Table 1: Identified telemental health services and requirements

<i>n</i>	Telemental health services	Telemental health requirements	
1	Improve quality of health care	Responsible institute	Ministry of Health and Medical Education Foundation of Martyrs and Veterans Affairs Ministry of Defense and Armed Forces Logistics Hybrid
2	Save health-care costs	Communication type	Synchronous interactions (real time) Asynchronous interactions (store and forward) Hybrid
3	Integrated service delivery	Communication tools	Video-teleconferencing Telephone calls Text messages to cellular telephone Email Social networking with peer group Web-based Interventions Hybrid
4	Increase patients satisfaction	Mental health services	Diagnosis/Evaluation Treatment/Care Simple counseling Hybrid
5	Increase providers' satisfaction	Settings type	Home VA health center Clinic Hospital Hybrid
6	Increase access to mental care	Patient group	Inpatient Outpatient Hybrid
7	Feasible alternative to face-to-face care	Approach to delivery	Individual therapies Group therapies Hybrid
8	Reduce health-care traveling		
9	Reduce transportation-related problems		
10	Reduce patient wait times for care		
11	Improve treatment and medication adherence		
12	Reduce unneeded hospitalizations		
13	Improve provider-patient communication		
14	Symptom reduction of mental disorders		
15	Reduce patient length of stay		
16	Reduce the negative effects of hospitalization		
17	Improve quality of life for veterans		

Table 2: The average score assigned to telemental health services

Telemental Health Services	Veterans	Mental health providers	Telemedicine experts	Total mean
Improve quality of health care	4.68	3.85	4	4.17
Save health-care costs	4.64	4.37	4.39	4.47
Integrated service delivery	4.23	4.12	3.98	4.11
Increase patient satisfaction	4.58	3.87	3.55	4
Increase providers' satisfaction	4.26	3	3.64	3.63
Increase access to mental care	4.88	4.10	4.03	4.33
Feasible alternative to face-to-face care	3.20	1.10	2.36	2.22
Reduce health-care traveling	4.62	4.21	4.28	4.37
Reduce transportation-related problems	4.73	4.40	4.28	4.47
Reduce patient wait times for care	4.26	3.62	3.86	3.91
Improve treatment and medication adherence	4.70	4	4.23	4.31
Reduce unneeded hospitalizations	4.36	3.94	3.86	4.05
Improve provider-patient communication	4.48	3.62	3.81	3.97
Symptom reduction of mental disorders	3.98	2.40	3.86	3.41
Reduce patient length of stay	3.25	1.89	2.26	2.46
Reduce the negative effects of hospitalization	4.21	3.21	3.62	3.68
Improve quality of life for veterans	4.60	3.72	3.68	4

Table 3: The percentage score assigned to telemental health requirements

Telemental health requirements	Veterans	Mental health providers	Telemedicine experts	Total percentage	
Responsible institute	Ministry of Health and Medical Education	17.10	19.35	13.89	16.78
	Foundation of Martyrs and Veterans Affairs	73.20	77.43	58.33	70.47
	Ministry of Defense and Armed Forces Logistics	2.40	0	2.78	2.01
	Hybrid	7.31	3.22	25	10.74
Communication type	Synchronous interactions (real time)	80.49	67.74	80.56	77.85
	Asynchronous interactions (store and forward)	2.44	9.68	2.78	4.03
	Hybrid	17.07	22.58	16.66	18.12
Communication tools	Video conferencing	71.95	70.97	83.33	74.50
	Telephone calls	7.32	6.45	5.56	6.70
	Text messages to cellular telephone	0	0	0	0
	Email	0	0	0	0
	Social networking with peer group	8.54	12.90	8.33	9.40
	Web-based Interventions	4.88	9.68	2.78	5.37
	Hybrid	7.31	0	0	4.03
Mental health services	Diagnosis/Evaluation	3.65	6.45	0	3.36
	Treatment/Care	4.88	9.68	13.89	8.05
	Simple counseling	17.07	16.13	22.22	18.12
	Hybrid	74.40	67.74	63.89	70.47
Settings type	Home	92.68	58.06	63.89	78.52
	VA health center	0	3.23	0	0.67
	Clinic	0	3.23	0	0.67
	Hospital	0	0	2.78	0.67
	Hybrid	7.32	35.48	33.33	19.47
Patient group	Inpatient	7.32	6.45	2.78	6.04
	Outpatient	10.98	29.04	22.22	17.45
	Hybrid	81.70	64.51	75	76.51
Approach to delivery	Individual therapies	81.70	58.06	80.56	76.51
	Group therapies	6.10	29.04	0	9.40
	Hybrid	12.20	12.90	19.44	14.10

(4.47 and 2.22, respectively). The average of given scores by statistical population is shown in Table 2.

Furthermore, among the identified TMH requirements, seven items were assigned a score higher than 50%. As shown in Table 3, at the “Responsible institute” category, the “Foundation of Martyrs and Veterans Affairs” item was scored 70.47%.

Discussion

TMH is an integral part of telemedicine technology. Due to the nature of TMH services and reduction in the need for medical examinations such as physical tests, paraclinical tests, and diagnostic imaging, it is expected that this area will grow much faster than other areas of telemedicine.^[20] Considering that both groups of patients and health-care providers as the main stakeholders of TMH services play a decisive role in promoting and improving these programs, their attitude toward the use of these services is imperative. The aim of this study was to identify the TMH service requirements and validate them from the perspective of the statistical population.

According to the findings of this study, 24 items were identified for TMH service requirements. Moreover, 17 items were validated for the TMH services category. In this section, “feasible alternative to face-to-face care” and “reduce patient length of stay” items were not selected as required services for TMH category. The results of similar studies showed that access to mental health services and communication with health-care providers in a standard manner will improve by using TMH services for veterans with movement restrictions in rural and remote areas.^[10,28] Moreover, Morland *et al.* suggested that providing TMH services in comparison with face-to-face care could lead to successful outcomes such as reducing the symptoms of PTSD, increasing satisfaction, and adherence to treatment in veterans.^[17]

According to the statistical population’s attitude, the use of TMH services can reduce the cost and saves time, reduce travel difficulties, and improve the quality of mental health care. Similarly, the results of a related study by Grady showed that providing teleconsultation services can reduce the cost of health-care services.^[21] Baird *et al.*, in a similar study, stated that TMH services fulfill all the three identified benefits by the Health Improvement Institute (2016), including patient satisfaction, quality improvement, and cost-effectiveness of health-care services.^[19] Likewise, the results of a randomized no inferiority clinical trial study by Morland *et al.* showed that providing mental health care through video conferencing has a positive impact on the continuity of treatment, access to mental health care services, and also significantly reduces the cost of treatment.^[25]

The findings of this study showed that “synchronous interactions (real time)” was selected as “communication type” from the perspective of the research community. Moreover, people participating in the study tended to be more willing to receive TMH services through video conferencing at home.

Generally, a willingness of veterans to use of TMH services depends on the service delivery method, the technology used for service delivery, and the location of receiving services. However, the veterans to receive psychological services by telephone and video conferencing at home are more desirable.^[3] It should be noted that providing TMH services at home will reduce the symptoms of illness and improve the treatment process for veterans. Furthermore, due to the presence of veterans in a familiar environment, they will be more comfortable and more cooperative with health-care providers to track their treatment plan.^[31] Based on the results of a similar study, the use of video conferencing technology and the provision of TMH services at home would reduce the symptoms of depression in veterans with PTSD and increase their satisfaction.^[29]

The statistical population of the present study had a positive attitude toward using TMH services as a facilitator in the health monitoring and treatment of veterans. Issues related to the educational needs of users, technical implementation costs, lack of appropriate technical infrastructure, information security and privacy issues, and concerns about prescribing and procurement of medicines were the main barriers to the implementation of TMH services in Iran. According to the results of similar studies, despite the significant benefits of TMH services, there are limitations in this area. For example, low awareness of video conferencing services often causes people to be reluctant to use this technology. Moreover, technical and financial constraints, especially in developing countries, can reduce the speed of development of TMH services.^[27,30]

Conclusions

In this article, we determined the TMH services/requirements in 2 main categories, including TMH services (17 items) and TMH requirements (7 items and 29 subcategories). Considering that Iran was not paid to TMH services/requirements for veterans, and in fact, there was no practical and effective action to use the capabilities of these services. Therefore, extensive studies in the field of need assessment, the possibility, and the effectiveness of TMH services are needed to provide mental health care for veterans. Furthermore, due to the importance of accessibility, and patient-based mental health services, more studies are needed to investigate the point of views of both veteran and service providers to better understand the concerns and barriers to the implementation and use of TMH services.

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Conflicts of interest

There are no conflicts of interest.

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