

The importance of quality and accreditation in health care services in the process of struggle against Covid-19

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Background/aim: The aim of this research is to evaluate the relationship between the quality of health and accreditation standards with the Covid-19 process and to reveal the importance of quality and accreditation in health care in the process of combating coronavirus.

Materials and methods: The relationship between hospital accreditation standards of Turkish Healthcare Quality and Accreditation Institute and the Covid-19 process was evaluated. The standards were analyzed within the framework of the technical guidance areas provided by the World Health Organization for countries for the Covid-19 process.

Results: The standards were found to be 79,6% related to the Covid-19 process. The standard set including risk management, health and safety of employees, patient safety, end of life services, prevention of infections, drug management, sterilization management, laboratory services, waste management, outsourcing, material and device management, adverse event reporting, corporate communication, and social responsibilities sections are 100% related to the Covid-19 process.

Conclusion: Studies on quality and accreditation in health services are important in terms of being prepared for Covid-19 and similar epidemic and pandemic situations, and to carry out planned and effective management of the process.

Key words: Coronavirus, Covid-19, healthcare quality, healthcare accreditation

1. Introduction

Covid-19 disease is an infectious disease caused by a new type of coronavirus [1]. The number of patients meeting the case definition for the new pathogen (SARS-CoV-2) known as Covid-19 is growing rapidly worldwide [2,3]. As of 11 March 2020, Covid-19 was declared as a pandemic disease by the World Health Organization (WHO), and as of May 06, 2020, it was reported that 3,758,773 cases were seen in 215 countries and 247,503 patients died [4,1]. As of May 06, 2020, the total number of cases in Turkey was 131,744, while the number of those died have been identified as 3584 [5]. Although technical information about Covid-19 is limited, comprehensive control measures for disease are taken worldwide, and WHO provides extensive guidance to community and service providers to minimize the spread of the disease. In line with both international control measures and national decisions, the process for reducing

the number of cases and preventing patient losses is being managed effectively by country and hospital managers and healthcare professionals all over the world.

In many countries of the world, quality and accreditation studies, which form an integral part of the processes related to the management of health services, play an important role in improving the care provided to patients. Many studies are carried out in order to improve the quality of patient care optimally, create a safe patient care environment, minimize risks to patients and employees, improve quality and ensure continuity of patient safety. These studies conducted worldwide are evaluating the performance of health institutions through the quality and accreditation system focused on the patient and organizational structure [6].

The most important component of the quality and accreditation systems are “standards”, which define how an

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optimal quality service should be provided and includes all elements related to health service delivery processes prepared with an inclusive perspective [7,8]. While establishing quality and accreditation standards, WHO's targets, international developments, health system structure of the countries and their needs and priorities are taken as basis. Standards prepared for accreditation activities in health services are accredited by The International Society for Quality in Healthcare (ISQua). Accreditation of a set of standards by ISQua means that the standards are prepared in a comprehensive design that meets ISQua principles. ISQua's principles for accreditation of standards are as follows: it is a defined process for the preparation and measurement of standards; the organizational capacity and performance of organizations that will apply the standards are considered; measures are taken to ensure the safety of patients and employees; risk assessment is carried; the continuity of care is ensured through a patient/service user-oriented approach, and regular monitoring of service providers, and evaluation and improvement of the process [9].

The purpose of this study is to evaluate the relationship between quality and accreditation standards with the Covid-19 process and to reveal the importance of quality and accreditation in health care in the process of tackling coronavirus.

2. Materials and methods

The relationship of quality and accreditation standards with the Covid-19 process has been evaluated in the context of the Hospital Accreditation Standards Hospital Kit (v2.0/2017) used within the scope of the Hospital Accreditation Program. This program is carried out by Turkish Health Care Quality and Accreditation Institute (TÜSKA) which was established in order to reveal the health services in Turkey, and is the first and only authority for accreditation activities. The content of the standard set was analyzed within the framework of the technical guidance areas provided by the World Health Organization (WHO) for countries for the Covid-19 process. The relationship of standards with the Covid-19 process was investigated at the level of the assessment criteria belonging to each standard in the sections that make up the content of the standards, and whether each assessment criterion is related to the Covid-19 process was evaluated within the framework of WHO Covid-19 technical guidance.

TÜSKA accreditation programs use "health accreditation standards", which are specially prepared for each program and accredited by ISQua [10]. All of the standard sets were prepared on the basis of WHO patient safety objectives, ISQua standard accreditation program principles, international standards, and country needs and

priorities. The structure of the standard sets is similar, the specific elements for each program are discussed in detail within the scope of the related set.

As part of TÜSKA Hospital Accreditation Program, one of TÜSKA's accreditation programs, "Health Accreditation Standards (SAS) Hospital Set (v2.0/2017)" is used [11]. The SAS hospital kit includes 7 dimensions and 33 sections including 58 standard and 240 assessment criteria. The standards consist of the following dimensions: management and organization, performance measurement and quality improvement, healthy working life, patient experience, health care, support services and emergency management. The dimensions represent the basic framework of the service processes offered in hospitals.

WHO Covid-19 guidance areas [12] associated with the accreditation standards are shown in Table 1. Issues that shown in the Table 1 have been handled by WHO and are also comprehensively covered in Health Accreditation Standards.

3. Results

The assessment criteria of the scope of SAS Hospital Kit (v2.0/2017) made within the framework of Covid-19 technical guidance areas published by WHO and the findings obtained as a result of this evaluation are shown in Table 2. As a result of the research, the SAS Hospital Kit (v2.0/2017) was found to be 79.6% related to the Covid-19 process. Of the 240 assessment criteria included in the standard set, 191 were directly related to the Covid-19 process (100%). The sections containing these assessment criteria are as follows: infection prevention, patient safety, employee health and safety, risk management, drug management, end-of-life services, sterilization management, laboratory services, waste management, outsourcing material and device management, adverse event reporting, corporate communication and social responsibilities. According to the results of the research, there are no sections that are not related to the Covid-19 process. The sections with low level of relationship are related to issues that are not directly related to the pandemic process, such as quality management structure (25%), basic policies and values (33%) related to the administrative processes of the hospital.

The standards that are 100 % related to the Covid-19 process can be see in Table 3 and Table 4. These standards show organization management and patient and employee related standards and assesment criterias.

In the "Emergency Health Services" section, standards for "making structural arrangements that facilitate service provision in the emergency department and making necessary arrangements by defining all processes from the acceptance of the patient to the departure of the emergency department" are substantially (92%) related

Table 1. WHO covid-19 guidance areas associated with the accreditation standards.

Technical Fields		Guidance Issues
1	Critical preparedness, readiness, and response actions for COVID-19	Critical preparedness, readiness, and response actions
		Responding to community spread of COVID-19
		Operational considerations for case management of COVID-19 in health facility and community
		Prioritized laboratory testing strategy according to 4Cs transmission scenarios
		Severe Acute Respiratory Infections Treatment Centre
		Considerations in adjusting public health and social measures in the context of COVID-19
2	Risk communication and community engagement	Risk Communication and Community Engagement (RCCE) Action Plan Guidance COVID-19 Preparedness and Response
		Mental health considerations during COVID-19 outbreak
		Risk communication and community engagement (RCCE) readiness and response to the 2019 novel coronavirus (2019-nCoV)
		The COVID-19 risk communication package for healthcare facilities
		Getting your workplace ready for COVID-19
		A guide to preventing and addressing social stigma associated with COVID-19
		COVID-19 SMS message library
3	Clinical care	Clinical management of severe acute respiratory infection when COVID-19 is suspected
		Clinical care of severe acute respiratory infections – Tool kit
		Recommendations: Prehospital Emergency Medical Services (EMS) COVID-19
		Severe Acute Respiratory Infections Treatment Centre
		Considerations for quarantine of individuals in the context of containment for coronavirus disease (COVID-19)
		Home care for patients with suspected novel coronavirus (nCoV) infection presenting with mild symptoms and management of contacts
		Operational considerations for case management of COVID-19 in health facility and community
		Maintaining a safe and adequate blood supply during the pandemic outbreak of coronavirus disease (COVID-19)
		Global COVID-19 Clinical Characterization Case Record Form and new data platform for anonymized COVID-19 clinical data
		Data platform for anonymized COVID-19 clinical data
WHO COVID-19 Essential Supplies Forecasting Tool		
4	National laboratories	WHO interim guidance for laboratory testing
		WHO interim guidance for laboratory biosafety related to COVID-19 virus
		Molecular assays to diagnose COVID-19
		WHO reference laboratories providing confirmatory testing for COVID-19
		Guidance for laboratories shipping specimens to WHO reference laboratories that provide confirmatory testing for COVID-19 virus
		Laboratory Assessment Tool for laboratories implementing COVID-19 testing
		Scientific brief: Advice on the use of point-of-care immunodiagnostic tests for COVID-19

Table 1. (Continued).

5	Infection prevention and control/WASH (IPC)	Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected
		Infection Prevention and Control for the safe management of a dead body in the context of COVID-19
		IPC guidance for long-term care facilities in the context of COVID-19
		Consideration for quarantine of individuals in the context of containment for coronavirus disease (COVID-19)
		Health workers exposure risk assessment and management in the context of COVID-19 virus
		Rational use of personal protective equipment for coronavirus disease (COVID-19)
		Advice on the Use of Masks
		Home care for patients with suspected novel coronavirus (nCoV) infection presenting with mild symptoms and management of contacts
		Q&A on infection prevention and control for health care workers caring for patients with suspected or confirmed 2019-nCoV
		Water, sanitation, hygiene and waste management for COVID-19
		Guide to local production of WHO-recommended Handrub Formulations
		Handbook for the inspection of ships and issuance of ship sanitation certificates
		6
Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected		
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Home care for patients with suspected novel coronavirus (nCoV) infection presenting with mild symptoms and management of contacts		
Q&A on infection prevention and control for health care workers caring for patients with suspected or confirmed 2019-nCoV		
Water, sanitation, hygiene and waste management for COVID-19		
Guide to local production of WHO-recommended Handrub Formulations		
IPC guidance for long-term care facilities in the context of COVID-19		
WHO SAVES LIVES: Clean your hands in the context of COVID-19		
Guiding principles for immunization activities during the COVID-19 pandemic		
Frequently Asked Questions: Immunization in the context of COVID-19 pandemic		

Source: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance>

to the technical guidance issues under “clinical care and infection prevention and control” issue published by WHO for Covid 19. “Determination of poisoning cases and procedures for forensic cases”, which is among the assessment criteria of emergency health services, is not directly related to the Covid-19 process.

In the “Emergency Management” section, standards for “natural disasters or extraordinary intervention, taking measures for incidents involving struggle, first aid or evacuation, timely intervention in cases of respiratory

arrest or cardiac arrest, and timely intervention in cases of violent risk/violent action against the health worker” are closely related (57%) to “risk assessment, critical preparedness, preparedness and response actions” within the fact that Covid 19 pandemic is of an extraordinary emergency.

4. Discussion

It is observed that many dimensions and departments within the scope of Health Accreditation Standards

Table 2. Relation level of TÜSKA hospital accreditation standards with COVID-19 process.

SAS Hospital Kit (V2.0/2017)			Relation with the COVID-19 process		
Dimensions	Sections	Number of assessment criteria	Related number of assessment criteria		Relation level (%)
Management and Organization	Document Management	5	4	30	80
	Training Management	4	3		75
	Adverse Event Reporting System	3	3		100
	Quality Management Structure	4	1		25
	Corporate Communication	3	3		100
	Organizational Structure	7	6		86
	Risk Management	7	7		100
	Social Responsibility	1	1		100
	Basic Policies and Values	6	2		33
Performance Measurement and Quality Improvement	Monitoring of Indicators	5	2	2	40
Healthy Work Life	Human Resources Management	5	5	10	100
	Health and Safety of Employees	10	5		50
Patient Experience	Patient Feedbacks	3	1	22	33
	Patient Safety	3	3		100
	Access to Services	4	3		75
	Basic Patient Rights	12	10		83
	End of Life Services	5	5		100
Health Services	Emergency Health Services	12	11	78	92
	Prevention of Infections	3	3		100
	Safe Surgery	5	1		20
	Patient Care	26	21		81
	Drug Management	6	6		100
	Laboratory Services	19	19		100
	Radiation Safety	3	2		67
	Sterilization Management	3	3		100
Transfusion Management	13	12	92		
Support Services	Waste Management	4	4	36	100
	Information Management	6	5		83
	Outsourcing	3	3		100
	Material and Device Management	7	7		100
	Hospitality Services	13	11		85
	Facility Management	7	6		86
Emergency Management	Emergency Management	23	13	13	57
TOTAL		240	191		79,6

Table 3. Organizational management related standards and assesment criterias.

Section	Standard	Assesment Criteria	Related WHO's Tecnical Guidance Issues
Adverse Event Reporting System	Reporting of adverse events that may or does affect the safety of patients and employees negatively must be ensured and necessary measures must be taken.	A system must be established for reporting adverse event affecting the safety of patients and employees.	-Clinical Care -Infection Prevention and Control
		Analyzing of events case by case, and improvement actions must be conducted.	
		Submissions on the system must be analyzed in a general, reported, and evaluated.	
Risk Management	Risks related to hospital and services provided in the hospital must be managed.	There must be a regulation related to managing the risks that may occur in the hospital.	-Risk Communication and Community Engagement
		A Risk management plan must be created to provide the manegement of risks related to hospital and services provided in the hospital.	
		Risk management plan must entail the following issues: » Patients, relatives, carers,visitors, staff, facility safety, environmental safety, administrative and financial processes, strategic risks, comminucation processes with stakeholders	
		Taking the scope of risk management into consideration, risks must be identified, analyzed and risk levels must also be identified.	
		Necessary measures must be taken according to the identified risk level and improvement activities must be carried out.	
		The risks identified within the framework of risk management and the effectiveness of improvement actions must be reviewed at regular intervals.	
Social Responsibilities	Hospitals must organize programs about promoting and improving health by taking health structure and general health problems of the society into account.	Hospital must organize programs about promoting and improving health by taking service capacity into account within the scope of health structure of the population and region where it provides healthcare and national and global health problems.	-Clinical Care -Infection Prevention and Control
Corporate Communication	Corporate communication activities must be carried out effectively.	Intended population must be determined taking into account hospital structure, basic policies and values within the scope of corporate communications.	-Critical Preparedness, Readiness and Response Actions for COVID-19
		Intended population must be informed about hospital activities and organization.	
		Necessary actions must be constituted to create a positive public opinion for the intended population.	

Table 3. (Continued).

Waste Management	In the scope of protecting human health and environment, safe and efficient management of wastes produced at hospitals must be maintained.	Waste management plan must be prepared.	-Infection Prevention and Control
		Waste must be separated at the source.	
		Necessary steps must be taken for the disposal, handling waste in appropriate conditions and temporary storage must be provided.	
		Training must be provided to employees related to waste management.	
Material and Device Management	Effective, efficient and safe use of materials and devices must be implemented.	Responsible staff must be determined for managing material and equipment.	-Clinical Care -Critical Preparedness, Readiness and Response Actions for COVID-19 - Infection Prevention and Control
		Materials and devices must be obtained according to the needs of institution.	
		Materials must be stored in appropriate conditions.	
		Necessary physical conditions must be met for devices to work properly.	
		Staff must be trained about topics related to material and device management.	
		Maintenance, calibration, adjustment and tests must be done for required devices.	
Outsourcing	Outsourced services must be provided to be in accordance with the hospital's core policies and values and Health Accreditation Standards.	Services to be provided by way of outsourcing must be determined to be appropriate for the hospital's policies and values.	-Clinical Care -Critical Preparedness, Readiness and Response Actions for COVID-19 - Infection Prevention and Control
		The scope and processes of the services provided by outsourcing must be defined.	
		It must be ensured that outsourced services will comply with Health Accreditation Standards	

Hospital Set are closely related to Covid-19 and similar processes in terms of patient and employee safety. Quality and accreditation studies, which form an integral part of health systems, play an important role in evaluating and improving the quality of health care, and are increasingly accepted as the preferred method for increasing health service quality at organizational and service levels [8]. Quality and accreditation studies are considered as an important driving force in terms of improving healthcare quality and patient safety [13,14].

The full implementation of quality and accreditation standards in hospitals may include possible epidemics, pandemics, etc. including the Covid-19 process. It will provide various benefits in extraordinary situations. These benefits will provide the advantage of being prepared for the patients and healthcare workers not to be harmed or to minimize the possible harm and to manage the process effectively.

When hospitals comply with the standards in this process, they will be able to identify risks related to the services provided in the early stage and take the necessary measures effectively.

With the help of functional planning and multidisciplinary process management both in intensive care and clinical care, the process of recovering the health of the patients will be shortened, and patient losses can be reduced.

Exposure to Covid-19 and the spread of the disease can be reduced to a minimum by taking protective measures. In the care process of suspected or confirmed Covid19 patients, drug materials and devices will be provided in sufficient quantities according to the needs. These can be kept in suitable conditions and ready to use in sufficient quantities at any time and can be used as required for patients when necessary.

The health and safety of healthcare workers will be provided to a maximum extent, laboratory applications

Table 4. Patient and employee related standards and assesment criterias.

Section	Standard	Assesment Criteria	Related WHO's Tecnical Guidance Issues
Patient Safety	The services provided at the hospital must be arranged in a way to protect the safety of the patient and their caretakers.	A committee must be established to ensure patient safety.	-Clinical Care
		Risk analyses must be performed for the determination of threats to patient safety and measures must be taken to reduce or eliminate risks that threaten the safety.	
		Quality improvement activities must be planned to ensure continuity of the safety of patients.	
End of Life Services	Services to be provided must be defined in case of ending of the patient's life.	Services must be provided with respect in case of ending of the patient's life, taking into account for the cultural and spiritual values.	-Infection Prevention and Control
		Processes of transportation, safe keeping of the dead and physical conditions in hospital must be implemented taking into account patient and relatives' cultural and spiritual values and expectation for respect.	
		Comfortable waiting areas must be established for patients and their caretakers, and funeral procedures must be determined for completion in the shortest time and easiest way.	
		Taking into account the physical and psychological status of the patient's relatives, an expert staff must be present during delivery of the dead to support their caretakers.	
		The dead must be defined with the credentials and delivered properly.	
Prevention of Infections	Required measures must be taken for prevention of infections.	A committee must be established for prevention of infections, and responsibilities must be determined	-Infection Prevention and Control
		A program must be created for prevention of infections.	
		The efficacy of prevention of infections must be monitored.	
Sterilization Management	The processes for the sterilization must be identified and controlled.	Physical areas and conditions in sterilization unit must be planned according to the process steps.	-Infection Prevention and Control
		Sterilization, storage, transfer of materials and related processes must be kept under control.	
		At every stage of the sterilization procedures, in the scope of time, device, method, user and evidence based on control parameters, traceability must be ensured.	
Drug Administration	Institutions must ensure an efficient and safe drug administration	A drug management structure that will provide an effective implementation of drug administration and coordination must be created.	-Clinical Care
		The basic and critical stages of all processes in the institution related to drugs, must be identified and their methods and rules must be determined.	
		The right drug must be provided at the right time and an effective stock management for drugs must be provided.	
		Drugs must be preserved in appropriate physical conditions.	
		In the drug preparation and implementation stages, precautions for the patient and worker safety must be taken.	
		Traceability of drug processes must be provided by using reporting infrastructures and related improvements must be done.	

Table 4. (Continued).

Laboratory Services	Laboratory physical environment must be established in a way that ensures test and employee safety.	In laboratory, designated areas for acceptance of samples, preparation prior to analysis, reporting of results after analysis must be arranged in a way that ensures safety of samples and tests.	-National Laboratories
		In all areas of laboratory, a healthy work environment must be ensured.	
	A test guide must be prepared for informing of healthcare workers responsible with out of laboratory processes.	A guide including general information on tests being performed in laboratory, rules about extraction, transfer, acceptance of samples, test methods, reporting of results and interpretation must be prepared.	
		Guide must be accessible by health care professionals.	
		Related healthcare staff must be informed about the use of guide.	
	Check of pre-analysis laboratory processes must be implemented.	Rules and procedures between test request and analysis must be defined.	
		Rules regarding test requests must be determined and information and guidance provision for related physicians must be ensured.	
		Training must be provided for related healthcare staff about extraction, transfer, acceptance of samples and pre-analysis preparation.	
	Check of analytic processes related to laboratory tests must be ensured.	Rules and procedures between analysis and verification of result must be defined.	
		Rules must be determined for the safe and effective use of devices in laboratory.	
		Quality control studies related to reliability of test results must be implemented.	
	Check of post-analysis processes related to laboratory tests must be ensured.	Information which is required to be in result reports must be determined.	
Reporting of test results timely and accurate must be ensured.			
Rules for interpretation of test results and clinical suggestions in reports must be determined.			
Process of safe and effective reporting panic/critical values must be defined.			
Rules related to preservation and archiving of leftover biological materials, uncompleted analysis samples and reports must be determined.			
Traceability of the processes related to laboratory tests must be ensured.	Records must be kept in regards to ensure traceability of samples and tests in all processes.		
Measurement parameters related to performance measurement and improvement of laboratory processes must be determined and monitored.	Indicators related to performance measurement of laboratory processes must be determined.		
	Results of indicators must be evaluated, monitored and required improvements must be implemented.		
Health and Safety of Employees	Factors threatening the health and safety of employees should be identified and necessary precautions should be taken to establish a life healthy and safe working environment	A committee for managing the threats for personnel health and safety must be formed.	Health workers
		Risk analysis regarding threatening elements for personnel health and safety must be performed and precautions regarding avoiding these risks must be taken.	
		Employees must use personal safety equipment for the defined risks.	
		Quality improving activities regarding sustaining personnel safety must be ensured.	
		Necessary physical and social means for improving work environment and work must be provided and individual needs for work life must be met.	

for the diagnosis of Covid-19 can be carried out in line with the principles of biosafety, and standards will be an important tool for effective coordination of the process against Covid-19 with minimal loss and damage.

There are no studies in the literature that reveal the relationship between quality and accreditation standards and Covid-19. However, studies that demonstrate the effect of accreditation on health services help us explain the relationship of standards and their positive effects on the patient care processes including epidemic and pandemic conditions such as Covid-19.

Sekimoto et al. concluded that hospital accreditation had a significant impact on the infrastructure and performance of hospitals for infection control and prevention in their research on the effect of hospital accreditation on infection control programs in Japan [15]. One of the sine qua non of preventing infections is the application of hand hygiene. In the literature, there are studies indicating that infection rates decrease significantly with the hand washing program alone [16,17]. Hand hygiene has also been put forward as one of the leading protection measures in the COVID-19 pandemic [18,19].

Habib and his colleagues investigated the effect of the hospital accreditation system on employee health and safety in their study and they demonstrated that accredited hospitals report better employee health and safety performance than nonaccredited hospitals [20]. The number of healthcare workers reported to be infected worldwide has reached significant levels during the Covid 19 pandemic period [21,22]. This situation once again reveals the importance of employee health and safety for health professionals. During the pandemic, carrying out studies investigating the difference between accredited health institutions and those who are not, will enable better management of future processes by providing data on COVID-19 specific employee safety.

El-Jardali et al. concluded that hospital accreditation is an effective tool to improve the quality of care offered to patients in their studies, in which they investigated the effect of hospital accreditation on the quality of care [23]. In another study, Melo conducted a qualitative case study on the impact of accreditation on improving the quality of health care, demonstrating that hospital accreditation contributes to improving health quality in general and more specifically

to patient safety [24]. The recovery and mortality rates, length of stay, intensive care needs and intubation rates of patients in Covid-19 show great variations among countries around the world. In addition, there are differences between countries' own health institutions [25,26]. To reveal the difference between accredited and nonaccredited healthcare institutions by conducting studies on the effect of accreditation on the quality of care and improvement of healthcare quality specifically for COVID 19 infection will make an important contribution to the literature.

Patient safety is one of the most important components of quality and accreditation studies. Hosford and Longo et al. have identified accreditation as a key predictor of the implementation of patient safety systems [27,28]. Lam et al. found that the accreditation of the United States by independent organizations in their observational studies, which examined the relationship between patient outcomes and accreditation in hospitals in the United States of America (USA), positively contributed to the reduction of readmission rates [29]. Tehewy et al. concluded that accreditation standards have a positive effect on patient satisfaction and maintaining performance in their studies to evaluate the accreditation program in health institutions in Egypt [30]. During and after the COVID 19 pandemic, carrying out the studies on patient safety and presenting it to the health community will ensure that the relationship between accreditation and patient safety is of high importance.

The limitation of this study is that there are no other studies based on each dimension/section that constitutes the scope of the standards. The further scientific studies and quality and accreditation studies will reveal the basis of each dimension/section that constitutes the scope of the standards more clearly and effectively.

5. Conclusion

Healthcare providers' previous studies on quality and accreditation prior to Covid-19 show that they can be prepared better for Covid-19 and other possible epidemic and pandemic situations in the future, and that they can manage the process in a more planned way.

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There is no conflict of interest among the authors.

References

1. World Health Organization. Web site, 2020. Accessed at: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>
2. World Health Organization. Laboratory biosafety guidance related to coronavirus disease 2019 (Covid-19). Accessed at: [https://www.who.int/publications-detail/laboratory-biosafety-guidance-related-to-coronavirus-disease-2019-\(Covid-19\)](https://www.who.int/publications-detail/laboratory-biosafety-guidance-related-to-coronavirus-disease-2019-(Covid-19))
3. Ji Y, Ma Z, Peppelenbosch MP, Pan O. Potential association between Covid-19 mortality and healthcare resource availability. *The Lancet Global Health*, 2020; 8 (4): 480. doi: 10.1016/S2214-109X(20)30068-1
4. BBC News. 2020. Accessed at: <https://www.bbc.com/turkce/haberler-dunya-51614548>

5. MoH of Turkey. Web site, 2020. Accessed at: <https://covid19bilgi.saglik.gov.tr/tr/>
6. Kayral İH, Gökmen Kavak D, Cengiz C. Healthcare quality and accreditation policies in place: In: Tengilmoglu D (editor) Health Policy. Ankara: Nobel; 2018. pp. 357-393.
7. Gökmen Kavak D. Turkish Health Care Quality and Accreditation Institute health accreditation standards. *Journal of Quality and Accreditation in Health* 2018; 14-20
8. Shaw, C, Groene O, Mora N, Sunol R. Accreditation and ISO certification: do they explain differences in quality management in European hospitals. *International Journal for Quality in Health Care* 2010; 22 (6) :445-451. doi: 10.1093/intqhc/ mzq054
9. The International Society for Quality in Healthcare (ISQua). Guidelines and Principles for the Development of Health and Social Care Standards. 4th ed. version 1.2; 2015. Accessed at: https://ieea.ch/media/attachments/2018/03/20/guidelines_and_principles_for_the_development_of_health_and_social_care_standards_4th_edition_v1.2.pdf
10. Turkish Health Care Quality and Accreditation Institute Web Site, 2020. Accessed at: <https://www.tuseb.gov.tr/EnstituSayfa/standartlar-6/>
11. MoH of Turkey. Accreditation Standards in Health Hospital Set (v2.0/2017), 2017. Accessed at: [https://www.tuseb.gov.tr/uploads/sas_hastane_seti\(v2.0-2017\)TR.pdf](https://www.tuseb.gov.tr/uploads/sas_hastane_seti(v2.0-2017)TR.pdf)
12. World Health Organization. web site, 2020c. Accessed at: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance>
13. Braithwaite J, Greenfield D, Westbrook J, Pawsey M, Westbrook M et al. Health service accreditation as a predictor of clinical and organisational performance: a blinded, random, stratified study. *Quality & Safety in Health Care*. 2010; 19 (1):14-21. doi: 10.1136 / qshc.2009.033928
14. Rooney AL, Van Osternberg, PR. Licensure, accreditation and certification: approaches to health services quality. The Quality Assurance Project. 1999, Accessed at: <http://www.usaidassist.org/sites/assist/files/accredmon.pdf>
15. Sekimoto M, Imanaka Y, Kobayashi H, Okubo T, Kizu J et al. Impact of hospital accreditation on infection control programs in teaching hospitals in Japan. *The Amerikan Journal of Infection Control*. 2008; 36 (3): 212-219. doi:10.1016/j.ajic.2007.04.276
16. Slota M, Green M, Farley A, Janosky J, Carcillo J. The role of gown and glove isolation and strict handwashing in the reduction of nosocomial infection in children with solid organ transplantation. *Critical Care Medicine* 2001; 29(2): 405-412. doi: 10.1097/00003246-200102000-00034
17. Jumaa PA. Hand hygiene: simple and complex. *International Journal of Infectious Disease*. 2005;9:3-14. doi: 10.1016/j.ijid.2004.05.005
18. World Health Organization. Interim Recommendation to Member States to improve hand hygiene practices widely to help prevent the transmission of the Covid-19 virus. 2020. Accessed at: <https://www.who.int/who-documents-detail/interim-recommendations-on-obligatory-hand-hygiene-against-transmission-of-covid-19>
19. Pogrebna G, Kharlamov AA. The impact of cross-cultural differences in handwashing patterns on the Covid-19 outbreak magnitude access. Preprint 2020. doi:10.13140/RG.2.2.23764.96649
20. Habib RR, Blanche G, Souha F, El-Jardali F, Nuwayhid I. Occupational health and safety in hospitals accreditation system: the case of Lebanon. *International Journal of Occupational and Environmental Health*. 2016; 22 (3): 201-208. doi: 10.1080/10773525.2016.1200211
21. The Centers for Disease Control and Prevention (CDC). Interim Operational Considerations for Public Health Management of Healthcare Workers Exposed to or with Suspected or Confirmed Covid-19: non-US Healthcare Settings. *Coronavirus Disease 2019 (Covid-19)* Accessed at: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/non-us-settings/public-health-management-hcw-exposed.html>
22. Heneghan C, Oke J, Jefferson T. Covid-19 How many healthcare workers are infected? University of Oxford, The Centre for Evidence-Based Medicine develops, promotes and disseminates better evidence for healthcare. 2020 Accessed at: <https://www.cebm.net/covid-19/covid-19-how-many-healthcare-workers-are-infected/>
23. El-Jardali F, Jamal D, Dimassi H, Ammar W, Tchaghchaghian V. The impact of hospital accreditation on quality of care: perception of Lebanese nurses. *International Journal for Quality in Health Care*. 2008; 20 (5): 363-371. doi: 10.1093/intqhc/mzn023
24. Melo S. The impact of accreditation on healthcare quality improvement: a qualitative case study. *Joutnal Health Organ Manag*. 2016; 30 (8): 1242-1258. doi: 10.1108/JHOM-01-2016-0021
25. The Institute for Health Metrics and Evaluation (IHME). Forecasting the impact of the first wave of the Covid-19 pandemic on hospital demand and deaths for the USA and European Economic Area countries. 2020. Accessed at: <http://www.healthdata.org/research-article/forecasting-impact-first-wave-covid-19-pandemic-hospital-demand-and-deaths-usa-and-murray-cjl>
26. Forecasting Covid-19 impact on hospital bed-days, ICU-days, ventilator days and deaths by US state in the next 4 months. medRxiv; 2020. doi:10.1101/2020.03.27.20043752
27. Hosford SB. Hospital progress in reducing error: the impact of external interventions. *Hospital Topics* 2008; 86 (1): 9-20. doi: 10.3200/HTPS.86.1.9-20
28. Longo DR, Hewett JE, Ge B, Schubert S, Kiely RG. Hospital patient safety: characteristics of best-performing hospitals. *Journal of Healthcare Management* 2007; 52 (3): 188-205.
29. Lam MB, Figueroa JF, Feyman Y, Reimold, KE, Orav EJ et al. Association between patient outcomes and accreditation in US hospitals: observational study. *The British Medical Journal* 2018; 36: k4011. doi: 10.1136 / bmj.k4011 Tehewy MA, Salem B, Habil I, Okda S. Evaluation of accreditation program in non-governmental organizations' health units in Egypt: short-term outcomes. *International Journal for Quality in Health Care* 2009; 21 (3): 183-189. doi: 10.1093/intqhc / mzp014