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# RE-AIM evaluation of accreditation process in Turkey

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## Abstract

**Background** Effects of accreditation on various areas of medical education were studied in literature. However, data about comprehensive evaluation of accreditation activities is limited. This paper aims to present how an accreditation agency self-evaluates its own accreditation activities.

**Methods** Association for Evaluation and Accreditation of Medical Education Programs (TEPDAD) is an accreditation agency in Turkey. RE-AIM evaluation framework was used to evaluate TEPDAD's activities. The accreditation processes were evaluated through indicators set for each of five RE-AIM evaluation framework dimensions (reach, effectiveness, adoption, implementation and maintenance). Data for evaluation for each dimension were gathered from the documents available in TEPDAD website and archives. Qualitative and quantitative analysis methods were used when necessary to investigate the degree of achievement for each indicator.

**Results** Seventy-five (83%) of 90 medical schools meeting the application criteria are registered in the accreditation system. Effectiveness analyses revealed that medical education programs improved in eight areas (education program, student representation, documentation, assessment, infrastructure/facilities, faculty development, educational management). Accreditation processes were well adopted by medical schools and TEPDAD volunteers. The number of medical education programs registered in the accreditation system has gradually increased over years. For the accreditation implementation process, medical schools and TEPDAD evaluators provided positive feedback. Medical schools and TEPDAD invested efforts to maintain the accreditation process over time and changing conditions. All of the previously accredited schools have applied for reaccreditation for the second or third cycles to maintain their status. TEPDAD has maintained its recognition status by national and international authorities by several times. The accreditation standards have been continuously reviewed and renewed when necessary. The organizational structure of TEPDAD has been changed in time considering feedback and past experiences. TEPDAD also arranges meetings to promote and maintain its activities.

**Conclusions** TEPDAD has achieved significant success in terms of reaching majority of the Turkish medical schools, leading to prominent developments in medical education programs without any significant problems related to process, procedures and maintenance. There are still areas of improvement for TEPDAD such as reaching all targeted schools and guiding medical schools to improve quality in diverse elements of medical education programs.

**Keywords** Medical education, Accreditation, RE-AIM evaluation

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## Background

The growing number of medical schools and students, along with increased student mobility, the globalization of healthcare services, physician migration, and the gradual increase in the number of cross-border medical education providers, as well as the pervasive use of distance education, give rise to concerns about the quality of medical education [1]. In order to address these concerns, quality assurance systems that include accreditation for medical education programs are required. This requirement has increased the efforts and interest to evaluate and improve undergraduate medical education programs using predetermined standards. The increase in accreditation activities may be attributed to a number of factors such as decision of the World Federation for Medical Education (WFME) to recognize the diploma equivalence of physicians who graduated from medical schools that meet the standards defined by WFME [2], decision of Educational Commission for Foreign Medical Graduates (ECFMG) to institute medical school accreditation by a recognized accrediting agency as a future requirement for certification to enter the healthcare system in the United States [3, 4] or a goal set by World Health Assembly in “Global Strategy for Human Resources for Health-Workforce 2030” for member countries to have accreditation mechanisms for health training programs [5].

The literature presents promising results that encourage wider use of accreditation processes. One such result is the potential of accreditation to improve healthcare outcomes, which can be attributed to its guiding effect on the modification of educational programs to match the health needs of society [6]. The intention of medical schools to enhance the quality, recognition, and prestige of their educational programs is another factor that contributes to the popularity of accreditation. The accreditation process provides motivation and support for medical schools to implement changes [7].

The current literature includes information regarding the impact of accreditation on some specific stakeholders. In a survey study asking for opinions of residents regarding the impact of accreditation on postgraduate educational and learning environments, some benefits of accreditation, particularly regarding infrastructure, were identified [8]. Another study evaluated accreditation outcomes in terms of the United States Medical Licensing Examination (USMLE) performance of students. The researchers found that graduates from medical schools accredited by an agency recognized by the WFME demonstrated superior performance compared to graduates from non-accredited schools. The researchers concluded that external evaluation of educational programs was associated with better educational outcomes, including

in the domains of basic science, clinical knowledge, and clinical skills performance [9]. In a document analysis of certain LCME standards that promote flexibility and encourage innovation to improve self-directed learning and life-long learning skills, the researchers concluded that LCME standards facilitate the delivery of an integrated and coordinated curriculum to cultivate self-directed and independent study abilities of medical students [10]. In a more comprehensive study reviewing the survey databases and site visit reports to investigate the influence of accreditation on educational change and reform in U.S. medical schools, the authors identified notable enhancements in over half of the institutions [11]. Blouin et al. determined perceived positive and negative effects of accreditation on medical schools by interviewing and discussing with deans and faculty leaders at some Canadian medical schools [6].

Above mentioned literature refers to particular effects of accreditation on graduate views, exam performances, standards of medical schools. On the other hand, literature suggests that evidence from previous accreditation implementations should be considered while establishing new accreditation institutions or trying to improve existing ones in terms of efficient use of resources or more effective quality assurance practices [12, 13]. This suggestion would only be realized when accreditation agencies comprehensively oversee all aspects of their work, analyse data relevant to the effectiveness of accreditation processes, and share their findings. Such self-evaluation reports of the accreditation agencies are missing in literature. For addressing this gap, the current paper provides the self-evaluation results of an agency regarding its accreditation processes.

The purpose of this study is to present how an accreditation agency self-evaluates its own accreditation activities.

## Methods

### Study design

Association for Evaluation and Accreditation of Medical Education Programs (TEPDAD) is a WFME recognized accreditation agency which carries out accreditation activities for undergraduate medical education in Turkey. TEPDAD's accreditation activities were evaluated using the RE-AIM evaluation framework which was conceptualized two decades ago as a program development and evaluation strategy. The reason behind using RE-AIM framework in this study was its potential to evaluate outcomes at both the individual and setting/contextual levels [14–16].

In the RE-AIM evaluation framework, “Reach” refers to the degree to which the target group is reached. “Effectiveness” determines the effects of the program such as

achievements of the goals and changes in target group data. “Adoption” is mainly the acceptance and recognition of the program activities by the target group and possible stakeholders. “Implementation” includes data on how the program is implemented and evaluation of the implementation process. “Maintenance” evaluates sustainability of the program activities.

### Setting

Currently, 116 medical schools (84 public and 32 private) offer 141 medical education programs (25 schools implement their programs both in Turkish and English languages) in Turkey [17]. The population is around 84 million and the population per medical school is almost 725,000 with variations in different geographical regions of the country. The number of medical schools has increased approximately twice every decade, starting from the 1970s until 2010. According to 2022 statistics, total number of students is 112,058 and the number of faculty (teaching staff) is 17,494 in Turkey. The overall student/faculty ratio is 6.4 (7.68 in public and 4.28 in private medical schools) [18].

TEPDAD was first established with the name of National Accreditation Board for Medical Education (UTEAK) under the framework of Council of Deans of Medical Schools in 2008. UTEAK started the process by defining working regulations and forming three working groups called “Accreditation Committee”, “Standard Setting and Development Commission (SSDC)”, and “Counselling and Training Commission (CTC)”. First version of the national accreditation standards was developed by the relevant commission after reviewing the standards of international accreditation agencies, health needs of the Turkish population and the status of medical education in Turkey. The CTC developed guidelines for preparation of self-evaluation report (SER) for medical schools, the evaluation of SER and for the site-visit. The same commission also organized courses to train potential evaluators on proper implementation of the accreditation process. UTEAK applied to the Higher Education Council for recognition in 2010. The Higher Education Council recommended UTEAK to establish an independent association instead of being a body under the Council of Deans of Medical Schools framework to avoid any possible bias and conflict of interest in accreditation mechanisms. Then, TEPDAD, as an independent association, was established the same year. The former “Accreditation Committee” retained its role as the TEPDAD’s decision-making body with the name of National Accreditation Council for Medical Education (UTEAK). SSDC and CTC continued to function with the same names and responsibilities in the organizational structure of TEPDAD. First accreditation applications of medical schools

were accepted in 2010. In 2011, the Higher Education Council recognized TEPDAD as an accreditation agency for undergraduate medical education in Turkey. Since 2011 to date, TEPDAD has been recognized initially by the Higher Education Council and now by Turkish Higher Education Quality Council. TEPDAD was recognized by WFME in 2013 and re-recognized in 2023 for ten years. TEPDAD also provides accreditation services outside of Turkey, mainly in the Middle-East Region and the Gulf area [19, 20].

Current organizational structure includes seven boards/commissions in addition to the executive board. These are UTEAK, International Accreditation Board for Medical Education (UATEAK), SSDC, CTC, Internal Evaluation Commission, Appeal Commission and Medical Students Commission. There is also a pool of evaluators who can be assigned for evaluation of SERs and site-visits (<https://doi.org/10.6084/m9.figshare.27144441>).

Further information about the organizational structure of TEPDAD and official or guiding documents used in accreditation is available in the official website of TEPDAD [21]. A timeline summarizing the progress of TEPDAD since the establishment date is presented at <https://doi.org/10.6084/m9.figshare.27144510>.

### Data gathering and analysis

Data gathering process and data analysis for each dimension of RE-AIM evaluation. Frameworks were as follows:

#### Reach

The indicators to evaluate this dimension were set as (a) the current number and proportion of medical schools participating or non-participating in accreditation activities of TEPDAD and (b) what has been done (the number of orientation meetings) by the agency to promote its activities for increasing the participation rate. The number and characteristics of the medical schools within and outside of the accreditation process, and the efforts of the agency to attract medical schools to the accreditation program were obtained from the TEPDAD archives and records available on the website [22]. The proportion of the schools in the accreditation program were determined by percentage calculations.

#### Effectiveness

The indicator to evaluate this dimension was set as “changes in the medical schools and in their medical education programs regarding main areas of the national standards throughout the accreditation process”. These changes were detected by reviewing the qualitative findings in site-visit reports and the annual progress reports of 27 accredited medical education programs of 25

school in the second or third cycle of accreditation submitted between 2018 and 2023. One of the items in the progress report is “please summarize the changes made in your school related to the accreditation process”. The answers to this item were analysed by the content analysis method. The text contents were coded one by one by two researchers independently and changes were outlined under certain themes created by combining similar codes. The consistency rate of independent coding was determined by percentage calculations.

### Adoption

This dimension was evaluated through the participation in and approval of accreditation activities in Turkey by the agency staff, medical schools, national and international institutions. The indicators were (a) current number of TEPDAD staff (b) number of medical schools in the accreditation system and changes in participation rates over time, (c) the national and international authorities that recognized TEPDAD activities and evaluation results. The information was obtained from the website and archives of TEPDAD. Percentage statistics were used to determine proportion of schools in the accreditation system.

### Implementation

The indicators to evaluate this dimension were set as (a) existence of defined and publicised implementation process (b) satisfaction of TEPDAD staff and medical schools with the implementation process (c) continuity of proper implementation over time and over changing circumstances.

All information about the implementation of the accreditation process was gathered from the documents shared on the official website of TEPDAD [21, 23]. In order to evaluate satisfaction of the schools with pre-visit accreditation process (SER preparation, relations with TEPDAD etc.), the associated SER parts including information about experience of the school since the application date were reviewed using content analysis method [24]. Post-visit feedback forms filled out by the site-visit teams and medical schools were reviewed to determine satisfaction of both parties with the site-visit process. The feedback form for medical schools includes nine items scored on a 5- point Likert scale asking for feedback of the school on activities before and during the site-visit. There is one more question in the same form asking the school to evaluate site-visit team over 10 points. A place is available at the bottom of the form for additional comments. The post-visit feedback form for the site-visit team includes three open ended questions asking each of the team members to evaluate visited school, team-mates and suggestions [25]. The quantitative data in the school

feed-back forms was analysed by calculating the average scores. The qualitative data in the SERs and post-visit feedback forms were analysed by the content analysis method.

Information on continuity of implementation was obtained from TEPDAD archive.

### Maintenance

The indicators to evaluate this dimension were set as (a) institutionalization of the agency (existence of organizational units in the association with well-defined roles and responsibilities, and attempts to increase functionality of these units, existence of ongoing efforts of the agency to improve the accreditation process by evaluating and changing, if necessary, the national standards, documents, and procedures over time), (b) continuity of recognition status of the agency over time. (c) number of medical schools that have started and are still continuing the accreditation process for multiple cycles.

Information on TEPDAD units, changes in national standards, documents and procedures over time and the reasons behind, the number of the schools in the second and third cycle of accreditation, change in organizational structure of TEPDAD, and efforts of TEPDAD for recognition for multiple cycles were obtained from the website and archives of TEPDAD. Information on the efforts of TEPDAD to promote the accreditation process such as meetings, workshops was obtained from the archives of the association.

## Results

### Reach

- (a) *The current number and proportion of medical schools participating in accreditation activities of TEPDAD*

To date, 75 of 90 medical schools (83%) meeting the application criteria for accreditation have been reached and included in the accreditation process. Distribution of Turkish medical schools regarding their involvement status with the accreditation process is outlined at <https://doi.org/10.6084/m9.figshare.27144582>.

- (b) *Activities by the agency to promote its activities for increasing the participation rate*

Since the early years of its establishment, TEPDAD has accepted invitations from all medical schools interested in the accreditation to organize orientation meetings on the process. Additionally, presentations have been given in national meetings such as congresses or workshops to reach targeted insti-



tutions. Eighty-nine orientation meetings have been organized so far.

## Effectiveness

### *Changes in the medical schools and in their medical education programs throughout the accreditation process*

The answers to the item “please summarize the changes made in your school related to the accreditation process” in the annual progress reports were coded by two researchers with a consistency rate of 85%. Eight themes of improvement were determined as given below. Sample statements of the schools regarding these themes are provided in Table 1.

#### 1. Revisions in Medical Education Programs

The improvements determined in medical education programs are the revisions of the educational objectives, aims, and competencies besides compliance studies with the National Core Curriculum of Undergraduate Medical Education. Increasing the proportion of student-centred active learning methods, small group activities are among commonly referenced improvements. Another improvement area was increased opportunities for scientific research activities for medical students.

#### 2. Increase in Student Representation

Providing student counselling services and increasing student representation in the educational committees were mentioned in the progress reports.

#### 3. Improvements in data collection, analysis, documentation, and monitoring systems

Eight medical schools emphasized the need for data collection and documentation systems for effective and efficient data collection. Some institutions have established systems to monitor certain aspects such as program evaluation or assessment.

Institutions started to pay more attention to better documentation. Guidelines on different aspects of the program such as the use of assessment methods, involvement of residents in education, or program evaluation have been developed or current ones have been revised by medical schools.

#### 4. Assessment of students

Improvements were detected in student assessment, especially in having structured exams and evaluation in clinical training, longitudinal and formative evaluation methods and use of technology for assessment procedures.

#### 5. Improvements in infrastructure, staff and physical facilities.

Progress reports revealed that the medical schools made improvements in administrative and academic staff, and in physical facilities throughout the accreditation process.

#### 6. Improvements in faculty development

Some newly defined regulations and improvements were detected for faculty development activities, especially in the organization of teaching skills courses.

#### 7. Improvements in program evaluation

Improvements were detected in program evaluation activities, especially in having regular feedback from principal stakeholders and systematic program evaluation approaches including regular analysis of the evaluation results and reports.

#### 8. Improvements in Educational Management

Of the 25 schools, 24 stated that they had taken decisions regarding educational management. Changes due to these decisions are establishment of new committees like continuous development coordinatorship and redefining the educational management structure. Additionally, job descriptions of the education management committees, and roles and responsibilities of members in these committees had been defined or clarified. Relations between the elements of educational management structure were also defined or revised. People with special expertise in different areas of education such as information technology or assessment experts were included in the education management structure.

Analysis of progress reports demonstrated that, the medical schools were relatively less reactive to recommendations of TEPDAD in areas of social accountability, community-based programs and interprofessional education.

## Adoption

### (a) *Current number of TEPDAD staff*

Sixty-seven members are involved in TEPDAD boards and commissions; some take part in more than one organ of the association. Besides these 67 members, there are 136 additional faculty members and students in the potential evaluator pool. Members in TEPDAD commissions and boards, and in evaluator pool are assigned from 49 different medical schools. One member representing the Ministry of Health, four members representing the Turkish Medical Association, two members representing medical students and a community representative take part in UTEAK, the decision-making board of TEPDAD. There is one medical student in the

**Table 1** Sample statements of the fully accredited medical schools in their progress reports that can be attributed to accreditation process

Improvement areas	Sample statements
Revisions in Medical Education Programs	<p>"Graduate competencies were redefined regarding the national core curriculum and linked to outcomes of each program unit"</p> <p>"Vision-Mission statements and Quality Policy of our Medical School were revised taking the opinions of all internal and some external stakeholders, and announced on the website"</p> <p>"Scientific research" program was started in our curriculum."</p> <p>"Common diseases in the region were added into the curriculum. Panels have been added to increase student-faculty interaction".</p> <p>"Problem-based learning (PBL) and interprofessional learning sessions were added to the program to support teamwork skills"</p>
Student Representation and support	<p>"The Medical Education Student Committee was established and the student representation in education committees was expanded"</p> <p>"A Mentoring Program has been started to support students."</p>
Data collection, analysis, documentation, and monitoring systems	<p>"A new "Education Management System" is being installed to monitor educational activities"</p> <p>"A software was developed for the systematic monitoring, development and reporting of all elements of the educational program".</p> <p>"A new information processing unit was established within the Dean's Office and the Student Affairs Office. A modern archive unit was built and operated"</p>
Assessment of students	<p>"We have started to use logbooks and structured oral exams in the clerkships".</p> <p>"A software was developed and used in MCQ exams"</p> <p>"We started to use progress tests in our school to monitor student performances over years"</p> <p>"Formative exams were added in the preclinical and clinical training program"</p>
Educational infrastructure, staff and physical facilities.	<p>"By providing additional secretarial assistance to the restructured boards of education, collaborations between them and the effectiveness of their activities improved".</p> <p>"Eighteen new faculty members were appointed to the departments in the need of academic staff"</p> <p>"Infrastructure of the clinical skills laboratory was renewed"</p>
Faculty development	<p>"A new directive" was developed and applied to monitor educational, research and health service activities of the academic staff""A PBL course was carried out for faculty. It was decided to organize a teaching skills course in case of need""The Faculty of Medicine has formed an in-house training team to implement teaching skills courses for faculty members".</p> <p>"Two academic positions for the Department of Medical Education were provided and announced last January"</p>
Program evaluation	<p>"A separate committee was established to organize program evaluation activities which were formerly organized by the curriculum committee."</p> <p>"We started to use structured forms to receive individual feedback from all faculty members as we did for students."Considering the suggestion by TEPDAD, we started to prepare comprehensive annual program evaluation reports and share through the website of the school".</p>
Educational Management	<p>"Regulatory documents have been updated to include duties and responsibilities of newly established "Selfevaluation Committee"</p> <p>"A continuous development committee has been established to design, manage and monitor continuous development activities for academic staff".</p> <p>"Educational management structure was redefined to ensure better coordination, cooperation and connection between the committees".</p> <p>"An expert of information technologies and assessment was included in the assessment committee"</p> <p>"Principles of data flow and sharing between the educational committees were redefined with a directive"</p>

SSDC and 31 medical students in TEPDAD Student Commission (<https://doi.org/10.6084/m9.figshare.27144441>).

(b) *Number of medical schools in the accreditation system and changes in participation rates over time*

The number of medical schools registered in the accreditation system has been gradually increasing in time as an indicator for adoption by the medical schools (Table 2). Some characteristics of the

**Table 2** Changes in the number and proportion of medical schools in the accreditation system over years

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total number of medical schools	71	73	75	78	80	83	85	94	96	101	110	114	112	114	116
Number and percentage of the schools in the accreditation system	16 (23%)	16 (22%)	22 (29%)	24 (31%)	24 (30%)	27 (33%)	29 (34%)	34 (36%)	39 (41%)	43 (43%)	49 (45%)	54 (47%)	61 (54%)	69 (61%)	75 (65%)

schools in the accreditation system are presented in Table 3.

(c) *The national and international authorities that recognized TEPDAD activities and evaluation results.*

TEPDAD was recognized by Turkish Higher Education Quality Council as the official accreditation agency for medical education in 2011, 2013 and 2015 for two years. In 2017 and 2022, TEPDAD had been recognized by the same council for a period of 5 years. WFME recognized TEPDAD in 2013 and 2023 for a period of ten years. Additionally, Student Assessment, Selection and Placement Center (ÖSYM), the institution organizing university entrance exams in Turkey, specifies fully accredited medical programs in its guidelines published for candidates every year. ÖSYM gets the updated list of accredited programs from TEPDAD annually.

Besides recognition by the Turkish Higher Education Quality Council and WFME, two medical education associations in Turkey (Turkish Medical Education Association and Association for Improvement of Medical Education) have also recognized, adopted, and supported TEPDAD's accreditation activities. TEPDAD works in collaboration with these two associations. Five national congresses on medical education have been organized with collaboration of three associations since 2014. Additionally, TEPDAD has collaborated with the Council of Deans of Medical Schools, especially in the national core curriculum development process. TEPDAD also assigns representatives to working groups of Turkish Medical Association and specialty boards. TEPDAD is a member of the Central European Network of Quality Agencies.

### Implementation

(a) *Existence of defined and publicised implementation process*

Implementation process scheme is presented at <https://doi.org/10.6084/m9.figshare.27151461>. The unique criterion for a medical school to apply for accreditation is graduating at least one batch of medical students trained in its own premises and being still going on providing medical education. Accreditation process is carried out on a voluntary basis. The voluntary medical schools get required information for submission and national standards for self-evaluation from the website of TEPDAD [23, 24]. TEPDAD invests ongoing efforts to make all accreditation procedures clearer including appeal mechanisms and share all information on its website. Currently implemented process is available at <https://doi.org/10.6084/m9.figshare.27144702>.

(b) *Satisfaction of TEPDAD staff and medical schools with the implementation process*

In analysis of the quantitative data in the feedback forms completed by the schools, the average score for the satisfaction of schools with the process was  $4.75 \pm 0.30$  over 5 (Table 4) and average general evaluation score given by the schools for the site-visit teams was  $9.06 \pm 1.06$  over 10 points.

Qualitative analysis of the SER sections about the implementation experience of the schools and text

**Table 4** Post-visit feedback of the medical schools

Item	Mean $\pm$ SD
Efficiency of communication with the institution during the preparation period for the visit	$4.94 \pm 0.21$
Objectivity during the visit	$4.84 \pm 0.42$
Courtesy during the visit	$4.96 \pm 0.14$
Positive and constructive attitude	$4.81 \pm 0.48$
Compliance with ethical principles	$4.91 \pm 0.28$
Preliminary information about the institution	$4.64 \pm 0.48$
Clarity of the questions asked	$4.79 \pm 0.41$
Appropriate use of time	$4.43 \pm 0.50$
The usefulness of the exit report	$4.44 \pm 0.50$
Overall	$4.75 \pm 0.30$

**Table 3** Distribution of public and private medical schools in the accreditation system according to age and accreditation status

Period since the foundation date (years)	Public Medical Schools (n)		Private Medical Schools (n)		Total
	Accredited	In the process	Accredited	In the process	
50 or more	12	1	-	-	13
30-49	18 <sup>a</sup>	-	1	-	19
10- 29	8	14	8	10	40
Less than 10	1	-	-	2	3
Total	39	15	9	12	75

<sup>a</sup> One school is conditionally accredited



parts of the school post-visit feedback forms has revealed no negative feedback from the medical schools regarding the implementation process of accreditation so far. All accredited schools declared that they had benefited of self-evaluation and external evaluation procedures including relations with TEPDAD. The schools also suggested that accreditation is an opportunity and incentive to eliminate deficiencies in their programs, and pave the way for development.

Quantitative data in the feedback forms delivered to site-visit team members revealed that the team members were generally satisfied with hospitality, collaboration and positive attitudes of the visited schools with some minor exceptions which were about communication problems experienced with the school administration. Site-visit team members highly appreciated the efforts, collaboration and professional behaviours of their teammates. The team members provided their suggestions on team compositions, timing and procedures of team formation, the usefulness of the visit guide, the content of the visit program and exit report format. These suggestions guided the agency in defining all documents and processes in their current form.

(c) *Continuity of proper implementation over time and over changing circumstances*

In the ten-year period between 2010-2020 all orientation trainings, site-visits and meetings within TEPDAD organs had been performed face-to-face. COVID-19 pandemic was the biggest threat for continuity of the accreditation activities. Because face-to-face education was suspended, consequently a shift to distance learning was needed, meetings and travels were restricted in the pandemic period. In order to continue accreditation processes in this period, both TEPDAD and medical schools had to adapt quickly to the requirements of pandemic conditions. The medical schools built the required infrastructure to start on-line education and trained the teaching staff and students for use of distance learning in a short time period. In order to guide medical students working in clinical settings during the pandemic, TEPDAD designed a freely available massive open online course to ensure the continuity of education during the pandemic with minimum risks [26]. Additionally, meetings of the TEPDAD boards and commissions, orientation meetings with medical schools and interim evaluation visits (there was no primary site-visit in the agenda at that time) were held online in this period. Therefore, the maintenance of accreditation activities was ensured without any significant

interruption in the workflow schedule of the association in the pandemic period. Considering the experiences of pandemic period, TEPDAD decided to continue using online platforms for orientation meetings and for majority of agency's internal meetings.

Another threat for continuation of the process was the large-scale earthquake that occurred in 2023 and affected 9 provinces in the south-east region of the country. Eight medical schools, four of which in the second cycle of accreditation process were affected by the earthquake. Education was suspended for a few weeks in these schools and then distance learning was started. Some of the students at these schools were transferred to other medical schools in the country.

### Maintenance

- (a) *Institutionalization of the agency (existence of organizational units in the association with well-defined roles and responsibilities, and attempts to increase functionality of these units, existence of ongoing efforts of the agency to improve the accreditation process by evaluating and revising the national standards, documents, and procedures over time)*

The website of TEPDAD includes information about aims, expectations and possible benefits of accreditation for the main stakeholders including medical schools, medical students and teachers besides community. In order to meet these aims and expectations, TEPDAD has required organizational structure as already mentioned in multiple cites of this paper. There have been some changes in the organizational structure of TEPDAD in time to maintain the accreditation services effectively. A student commission including the representatives of the fully accredited schools was established in 2017 and UATEAK was established in 2018. An internal evaluation commission was established in 2019 due to recommendations of Turkish Higher Education Quality Council. Finally, an Appeal Commission was established in 2023 to deal with institutional appeals to accreditation decisions and personal complaints due to recommendations of WFME. The working regulations for newly established commissions were defined and published in the "TEPDAD Working Regulations" document on the website [27, 28].

Another effort for maintenance was continuous review and renewal of the standards by TEPDAD.

After the first version of the standards had been published in 2009, revised versions were developed and published in 2011, 2015, 2018, 2020 and 2021. SSDC regularly reviews the standards considering the feedback from the schools, TEPDAD members/evaluators and other stakeholders. Some minor changes had been made in 2011 and 2015 versions mainly to increase understandability and to create meaningful standard groups by replacing some standards. In these versions, four basic and two development standards were added into the standard list. The number of applications for accreditation, hence the number of people dealing with the standards as well as experience of TEPDAD evaluators gradually increased over time. This resulted in having a substantial amount of feedback on standards in terms of understandability, suitability for evaluation, applicability, necessity or design. Therefore, a 3-day workshop was organized with participation of all members of TEPDAD commissions to review, discuss and revise the standards in 2017. The most significant change in standards was made in this workshop and the updated version was published in 2018. This version is still used with minor modifications made in 2020 and 2021 due to changing conditions in COVID-19 pandemic and widespread use of distance education. One basic standard for maintenance of education under unexpected conditions that may lead to suspension of the education and one basic standard for regulations of distance learning were added. The difference between the numbers of the standards in the first and the currently used standard sets is presented in Table 5.

(b) *Continuity of recognition status of the agency over time.*

TEPDAD has invested some efforts to maintain the recognition status of the association by the Turkish Higher Education Quality Council and WFME to continue its activities officially. For this purpose, TEPDAD applied to the authorities at the end of each recognition period to renew the recognition position. As already mentioned, the association has been recognized by the Higher Education Quality Council six times and by WFME twice.

TEPDAD activities have been promoted in several national meetings and international conferences two of which were organized in Turkey. A workshop was performed to establish a framework on social accountability of the medical schools in 2018 and the results were published both in the website [29] and in the literature [30]. A special working group studied the consistency of decisions between evaluators on each standard analysing the former self-evaluation report evaluations in a workshop held in 2019. A summit was organized on August 2022 where the aims of medical education for Turkey were discussed and a document is under preparation which will be finalized shortly. Additionally, TEPDAD organized two symposia in 2012, 2015 and 2024 to share good practice samples of the accredited programs with medical schools.

(c) *Number of medical schools that have started and are still continuing the accreditation process for multiple cycles.*

Besides TEPDAD, the medical schools have invested some efforts for maintenance. Of the accredited 54 programs, 27 are in the first cycle, 18 are in the second cycle, and 9 are in the third cycle of full accreditation status. All of the previously accredited schools have applied for reaccreditation for the sec-

**Table 5** Distribution of the initially defined and currently used basic and development standards regarding main titles

Main titles	First standards (2009)		Current standards (2021)	
	Basic (n)	Development (n)	Basic (n)	Development (n)
1. Aims and objectives	5	1	8	2
2. Structure and content of the educational program	8	6	14	9
3. Assessment of students	5	3	3	2
4. Students	5	5	8	4
5. Program evaluation	2	2	5	2
6. Academic staff	5	5	6	4
7. Infrastructure and opportunities	5	4	8	3
8. Organization, management and execution	5	3	8	3
9. Continuous renewal and improvement	1	1	6	0
Total	41	30	66	29

ond or third cycles so far. There is no school that has started but not maintained the accreditation status. In order to ensure maintenance of accreditation status, medical schools generally have formed permanent organizational structures responsible for ongoing self-evaluation and reporting. Additionally, the schools have also complied with the great majority of recommendations provided by TEPDAD in the former evaluations. Fully accredited schools generally prepared the yearly progress reports or interim reports on time for multiple cycles. Deadlines have been extended for the schools especially in the earthquake zone if requested.

## Discussion

This study evaluated accreditation processes conducted by TEPDAD using RE-AIM framework. Discussion is structured regarding findings for each of the RE-AIM framework separately.

In evaluation of “reach” dimension, having more than 80% of the medical schools that meet the application criteria in the accreditation system in a period of less than 15 years seems to be a noteworthy achievement by TEPDAD. The underlying reasons why accreditation has become so widespread and adopted among medical schools in a short time period may be discussed from several perspectives. First reason may be TEPDAD’s constructive communication and interaction with the medical schools and other stakeholders such as medical education associations, Council of Deans of Medical Schools, Turkish Medical Association and specialty boards. All efforts to inform medical schools to clarify the accreditation process and roles of TEPDAD and the schools in this process may have an encouraging effect on candidate schools to submit for accreditation. Collaboration with other organizations may have helped dissemination of the accreditation activities. Additionally, announcement of fully accredited medical schools in annually published ÖSYM guidelines for university entrance exam is seen as a matter of prestige by medical schools and their students. This may also have a driving force for the schools to be involved with the accreditation. Although majority of the medical school graduates are employed in Turkey, the decision of the ECFMG not to accept graduates from non-accredited foreign medical schools for its exams may have a minor effect leading to bottom-up pressure from medical students besides prestige.

In evaluation of “effectiveness” dimension, our findings demonstrate that significant improvements have been accomplished by the medical schools throughout the accreditation process in terms of educational methods, education management organization,

documentation, assessment of the students, facilities for education, systematic program evaluation and faculty development. Similar impacts of accreditation on medical schools were reported in literature [11]. In their qualitative study based on individual and focus group interviews, Blouin et al. reported positive effects of accreditation on schools under nine themes similar to ours. They also determined four themes related to negative consequences of the accreditation. These themes were “costs”, “feelings and morale of faculty members and staff”, “school reputation” and “negative consequences on innovation related to accreditation standards” [6]. Our study was carried out on the basis of document analysis and we did not perform any interviews as in the study of Blouin et al. to have in-depth information especially about possible negative effects of accreditation process or feelings of the faculty members. Although no negative effect on accreditation was detected in analysis of the school feedback documents, having no interview with the school representatives is a limitation of the current study.

Despite improvements in medical education programs of Turkish medical schools in the accreditation process, some special aspects of the programs are still behind the expectations. For example, social accountability needs to be stressed more by the medical schools both in their institutional aims and programs. A “social accountability” document was prepared and published on the website of TEPDAD to support medical schools on how social accountability should be held in their aims and programs [29].

One more issue is that, except for a few sporadic samples, the improvement in community-based elements of the programs especially education within the community was limited at the primary care centres. This is mainly related to the changes of health care system in Turkey. This issue is emphasized in all feedback documents presented to the schools after accreditation decision had been made.

Another area for improvement is interprofessional education opportunities for medical students. Regarding the fact that all graduates will work within the healthcare providing teams, interprofessional education will be beneficial to prepare the medical students for the postgraduate working conditions.

There are impressive studies in the literature investigating different effects of accreditation on various areas of medical education. Some of the investigated outcomes of the accreditation in those former studies were not held in the current study. For example, the impact of accreditation on postgraduate educational and learning environments or on postgraduate exam performances was investigated in the literature [8, 9], but we have not

explored such impacts of accreditation. This may be considered as another limitation for our study.

The literature has individual medical school reports on how they benefit from accreditation processes to develop strategies for change management [31]. Similar reports by Turkish medical schools including their actions for change management due to accreditation requirements may provide an idea for program quality improvement for other medical schools in the country.

Evaluation of “adoption” dimension in the current study demonstrates that the accreditation activities have been approved by hundreds of TEPDAD volunteers and by increasing number of medical schools including school staff and students. Recognition status of TEPDAD by national and international authorities has continued without interruption over the years. This may be attributed to professional competence of the agency and constructive relations with medical schools.

In evaluation of “implementation” dimension, our findings indicate that all accreditation processes were clearly defined and shared with the stakeholders through the website. Feedback from the stakeholders are considered to improve effectiveness of implementation. TEPDAD staff and medical schools are highly satisfied with the implementation process and procedures. Continuity of proper implementation was ensured over time despite negative conditions such as pandemic or earthquake possibly due to ability of the agency and medical schools to react rapidly to unexpected situations.

Finally, in evaluation of “maintenance” dimension, our findings indicate that TEPDAD is an institutionalized agency which has an effective organizational structure with well-defined and documented job descriptions to maintain accreditation activities. The agency invests ongoing efforts to improve functionality of its organizational units and the accreditation process by evaluating and revising the national standards, documents, and procedures over time. As for the medical schools, once a medical school applies for the accreditation, it never leaves the process. Therefore, the aim of TEPDAD should be to encourage medical schools to initiate the process. For this aim, TEPDAD needs to focus on the medical schools outside of the accreditation system and encourage these schools to self-evaluate themselves first regarding the accreditation standards to determine strengths and areas for improvement in their programs and then decide on ideal time to apply for accreditation.

## Conclusion

The results of the current study suggest that TEPDAD has reached majority of the Turkish medical schools and include them in the accreditation system. Accreditation processes of TEPDAD have led to prominent

developments in medical education programs without any significant problems related to accreditation process, procedures and maintenance. There are still areas of improvement for TEPDAD such as reaching all targeted schools and guiding medical schools to improve quality in diverse elements of medical education programs. We recommend accreditation agencies to share their self-evaluation results to inform other agencies about their achievements and improvement areas. Lessons learned from the experiences would be beneficial to shape the future of accreditation all around the world.

## Abbreviations

WFME	World Federation for Medical Education
ECFMG	Educational Commission for Foreign Medical Graduates
TEPDAD	Association for Evaluation and Accreditation of Medical Education Programs
ÖSYM	Student Assessment, Selection, and Placement Center
UTEAK	National Accreditation Board for Medical Education
UATEAK	International Accreditation Board for Medical Education
SSDC	Standard Setting and Development Commission
CTC	Counselling and Training Commission
SER	Self-evaluation report
PBL	Problem-based learning
MCQ	Multiple choice question

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## Authors' contributions

LA, MKA and HID conceptualized the study, gathered and analysed the quantitative data, LA and YS performed the qualitative analyses and interpreted the results. LA, MKA and IS were major contributors in writing the manuscript. All authors read and approved the final manuscript.

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## Data availability

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

## Declarations

### Ethics approval and consent to participate

Not applicable.

### Consent for publication

Not applicable.

### Competing interests

The authors declare no competing interests.

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