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Research Article

Quality of the Curriculum of Health Technology Assessment Master Program in Iran

Zahra Heydari Fard [1,*], Mitra Zolfaghari [2], Bahareh Yazdizadeh[3]

[1] Tehran University of Medical Sciences, Tehran, Iran
[2] Nursing and Midwifery Care Research Center, School of Nursing and Midwifery, e-learning Department of Virtual School. Tehran University of Medical Sciences, Tehran, Iran
[3] Epidemiology Knowledge Utilization Research Center, Tehran University of Medical Science, Tehran, Iran

[*] *Corresponding Author:* Tehran University of Medical Sciences, Tehran, Iran. Email: z.heydarifard67@gmail.com

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Abstract

Objectives: It is essential to improve the educational curriculum over time. This study aimed to evaluate the quality of the health technology assessment (HTA) curriculum in Iran.

Methods: This cross-sectional study was conducted in three groups of professors, students, and graduates of HTA by the census. The data needed for this purpose were collected using a specific questionnaire. Finally, descriptive and analytical statistics were used for data analysis.

Results: Of 127 individuals, 114 individuals responded to the study (response rate = 89%). The quality of the curriculum in terms of design elements in the core courses and the elements of the executive courses in the curriculum are in the range of medium to medium-to-optimal (1.66 < mean > 2.32 to mean > 2.32, respectively). Also, the majority of the elements of the core courses and design elements are from compensatory courses in an unfavorable to moderate (1.66 > mean to 1.66 < mean > 2.32, respectively).

Conclusions: The results of this study showed that there was no significant problem in most design elements of the curriculum sections. However, there are some challenges in some elements of the operation. Therefore, it is suggested to madding some changes to correct inappropriate elements. To achieve this objective, it is necessary to investigate the interests of other stakeholders involved in this field and thus enhance the quality of the curriculum. Implementing the proposed proposals and reviewing the curriculum studied can be considered an important step to improve the HTA curriculum in Iran.

Keywords: Health Technology Assessment, Curriculum, Quality Assessment, Evaluation

1. Background

Health technology assessment (HTA) in the Asian Pacific region was first proposed by David Banta in China and the Asian HTA Network (1). In Iran, an HTA program was established in 2007. Later, the first admission period for students in this area was started in 2010 at the Faculty of Health of Tehran University of Medical Sciences at Master of Science level and with the admission of four students (2, 3). In the following years, students' enrollment in this field increased such that in addition to Tehran, the Yazd University of Medical Sciences in 2013, and Kerman University of Medical Sciences and Iran University of Medical Sciences in 2014 began to admit students. In this way, the number of students admitted to this field reached 9 to 12 students a year. The total number of curricula in this field is 31 units, of which 21 are core courses, 4 are non-core courses, and 6 units are allocated to the thesis (2).

Students must take a written exam to enter the field. Students from all disciplines (for example, from general practitioner of medical sciences to public health, medical information, medical engineering) at undergraduate level can participate in this exam. Exam materials include health economics, management, epidemiology and biostatistics, and the health system. All courses are two-credit units except medical information systems, knowledge transfer, and standards, which are two-credit units. Two core courses are apprenticeships. This course is completed in the centers that are doing HTA work; for example, the HTA office at the Ministry of Health or the National Institutes of Health Research. In addition to the mentioned units, the background of the students must be considered by the department. Accordingly, they are offered with all 9 credits or several compensatory with the approval of the Department of Education and with the approval of the Graduate Council (2).

The curriculum is a full view of educational activities and the goals play a crucial role in the success or failure of

academic centers (4, 5). Francis Klein and Sanyal Martin believe that the coordination between the objectives of the curriculum with the professional needs of the audiences, as well as pursuing the subjects of the curriculum, are important features of a good quality curriculum (6, 7). The lack of accurate ongoing review and review of the curriculum are among the main reasons for failure in the educational system. In this regard, it can be argued that if the quality of academic education is inadequate and inappropriate, it will lead to a shortage of skilled and expert human resources (8). Therefore, these programs deserve paying close attention and supervision (9) and reviewing all imperative dimensions and elements of the curriculum (10). In the context of the Francis Klein model, the curriculum quality assessment is composed of nine elements: objective, content, time, evaluation, teaching-learning strategies, learning activities, materials, and resources (educational, human, other), grouping, and location (11, 12). The development and improvement of HTA require an appropriate learning platform and training the skilled and capable human resources (13, 14).

2. Objectives

Regarding the continuous and accelerated changes in science and technology, new issues and challenges emerge in the field of HTA. The purpose of this study is to evaluate the quality of the curriculum and to assess the desirability and status of its elements and components such that to achieve the intended goals for academic institutions and academic education. Therefore, considering the importance of the issue, this study aimed to achieve these goals in HTA master program in Iran.

3. Methods

3.1. Study Population

This study was conducted at some medical universities of Iran, including Tehran, Iran, Kerman, and Yazd. The sample also included students, graduates, and professors involved in the field. Not all students, however, met the inclusion criteria. The important criterion for admission was passing and acquaintance with all the courses. So, only the last semester students were allowed to participate in the study.

The census was performed on 127 participants (45 professors, 39 graduated, and 43 students) of which 114 (40 professors, 35 graduated, and 39 students) responded to the study and non-respondents were followed three times by e-mail. All the learners participated in the study from the time of the formation of the field to the year 2016.

3.2. Data Collection

Data collection tool was a questionnaire developed based on Klein's curriculum evaluation framework with nine areas. The following questions are asked about each element to clarify the status of these elements in the quality assessment process of the curriculum: (1) Objective: What are the learning objectives of the learners? (2) Content: What do learners learn? (3) Learning activities: How do learners learn? (4) Teaching strategies: How does the teacher facilitate the teaching and learning process? (5) Educational materials and resources: What do learners help with learning? (6) Grouping: With whom do they learn? (7) Time: When and when do they learn? (8) Location or Space: Where do they learn? (9) Evaluation: How much progress have they made in learning? Of the nine elements, four elements (objectives, content, evaluation, and time) are design elements and the rest (location, materials and resources, learning activities, teaching strategies, and groupings) were executive. Finally, the questionnaire was sent in person and electronically to the target groups. Also, because of the small sample size, the census method was applied for data collection.

3.3. Determination of the Validity and Reliability of the Questionnaire

Ten experts from HTA, Biostatistics, Epidemiology, Medical Education, and Curriculum commented on the content and nominal validity qualitatively. In the end, the validity of the questionnaires was confirmed by Guidance and Consultant professors. To determine the reliability of the questionnaire, 30 individuals (20 students and graduates and 10 professors) in every two turns completed the test-retest questionnaire with an interval of two weeks to a month. The classification of the HTA based on the alpha value is as follows: excellent (> 9.0), good (0.8 - 0.9), acceptable (0.7 - 0.8), debatable (0.6 - 0.7), weak (0.5 - 0.6), unacceptable (< 0.5). To remain an item in the questionnaire, the alpha must be at least equal to 0.7. Appendix 1 shows the results of the Cronbach's alpha coefficient and the internal correlation coefficient for each of the domains and the total result.

3.4. Data Analysis

Descriptive statistics (frequency, percentage, and mean) and analytical statistics (two-way ANOVA and Friedman analysis) were applied to collect demographic information and the information of the questionnaire among learners (students and graduates) and professors, respectively. Desirability of the questionnaire was assessed based on weighting each element and in five quality ranges: unsatisfied (1.66 > mean), unsatisfied to average (1.66 > mean to 1.66 < mean > 2.32), unsatisfied to satisfied (1.66 > mean to mean > 2.32), average (1.66 < mean) > 2.32), average to satisfied (1.66 < mean > 2.32 to mean > 2.32), and satisfied (mean > 2.32).

3.5. Ethical Considerations

Participants took part voluntarily in this study. Also,

they were ensured about the confidentiality of the information before completing the questionnaire. This study was approved by the Ethics Committee of the Tehran University of Medical Sciences. All tests adhered to the Helsinki Statement.

4. Results

4.1. Demographic Information

Generally, 40 professors (35.1%), 35 graduates (35.7%) and 39 students (34.2%) participated in this study. About 51.6% of the professors were male and 84.6% of the students were female. The minimum age of teachers was 30 years and their maximum age was 63 years, the minimum age of learners was 27 years and their maximum age was 43 years. Of the 40 lecturers, 35 were full-time but five were teaching part-time. The lecturers were graduates of different disciplines. Most of them were educated in epidemiology, economics, and health management and with a few of them in health law. Learners have also graduated from a variety of disciplines, most of which being graduated in public health, HIT, and other medical sciences.

4.2. The Cronbach Alpha

According to Appendix 1, the Cronbach's alpha coefficient was 0.91 (objectives (0.70), the content (0.76), time (0.71), evaluation (0.82), place (0.80), learning activities (0.77), teaching strategies (0.78), grouping (0.80), human resources (0.81), educational resources (0.72), and other resources (0.73)). Also, the internal correlation coefficient was 87% (objectives (0.68), the content (0.64), time (0.72), evaluation (0.71), place (0.94), learning activities (0.72), teaching strategies (0.71), grouping (0.80), human resources (0.74), educational resources (0.73), and other resources (0.71)). Therefore, the obtained result was the reliability of the tool for each question and finally, the questionnaire was approved. Moreover, the views of different groups on the reliability of different elements of the questionnaire were not significantly different.

4.3. The Quality of Curriculum Elements in the Core, Non-core, and Compensatory Courses in the Studied Groups

According to the information in Table 1, the quality of elements of the group has the following order: human resources, training, learning activities, and teaching strategies in the core and non-core courses, and the purpose and time of the design. Also, the human resource element in compulsory courses and the evaluation element in compensatory courses were observed in varying levels of quality in the range of unfavorable to a desirable average. The rest of the elements in the various parts are in the mid to high-quality range. Of all elements that were in a different range of mean, only the element of teaching strategies was reported among the different respondent groups ($P < 0.05$) and the difference was statistically significant. Furthermore, no statistically significant difference was observed in the elements of activity, learning activities, evaluation, place, goal, content, time, materials and resources, and grouping ($P > 0.05$).

Table 1. Quality of HTA Courses According to the Nine Curriculum Elements in Learner Groups a

Courses	Objectives	Content	Time	Evaluation	Space	Learning Activities	Teaching Techniques	Grouping	Human Resources	Educational Resources	Other Resources
Principles of health technology assessment	2.61 - 2.99 ××	2.21 - 2.56‡‡	1.51 - 1.79‡	1.92 - 2.45‡‡	2.43 - 2.63a	1.68 - 2.15††	2.10 - 3‡‡	0.93 - 2.10‡	0.78 - 2.29‡	1.65 - 2.15‡	1.87 - 2.37‡‡
Systematic review and meta-analysis	2.84 - 3.293××	1.74 - 2.65‡‡	1.41 - 1.63†	1.81 - 2.25††	2.25 - 2.51‡‡	1.69 - 2.08††	2.15 - 2.34‡‡	2.15 - 2.34‡‡	1.41 - 2.13‡	1.57 - 2.27‡	1.71 - 2.10††
Economic evaluation	2.60 - 2.95××	2.16 - 2.50‡‡	1.54 - 1.71‡	1.78 - 2.25††	2.25 - 2.49‡‡	1.50 - 2.10‡	1.61 - 2.10‡	1.40 - 2.10‡	1.60 - 2.05‡	1.59 - 2.04‡	1.94 - 2.37‡‡
Statistical methods 2	2.45 - 2.82××	2.25 - 2.58‡‡	0.53 - 2.13‡	1.99 - 2.28††	2.27 - 2.75‡‡	1.74 - 2.30††	1.34 - 2.11‡	1.30 - 2.08‡	2.55 - 2.88××	2.36 - 2.69××	2.43 - 2.70××

Apprentice-ships	2.40 - 3××	1.77 - 2.82‡‡	0.37 - 2.18‡	1.68 - 3.08‡‡	2.87 - 3.17××	0.43 - 1.44†	1.49 - 2.14‡	2.23 - 2.40‡‡	1.30 - 2.16 ‡	1.72 - 2.60‡‡	1.70 - 2.60‡‡
Qualitative research	0.89 - 2.18‡	2.41 - 3.53××	1.71 - 2.38‡‡	2.24 - 2.45‡‡	2.53 - 3.20××	1.73 - 2.86‡‡	1.98 - 3‡‡	2.25 - 3.02‡‡	2.47 - 2.71××	2.46 - 3.63××	2.44 - 3.26××
Knowledge translation	2.47 - 3.42××	2.45 - 3.47××	1.72 - 2.17††	1.95 - 3.05‡‡	2.60 - 3.16××	1.95 - 3.14‡‡	1.44 - 2.21‡	1.42 - 2.18‡	1.67 - 2.25††	2.30 - 3.10‡‡	1.98 - 2.35‡‡
Medical device quality assurance and regulatory compliance	2.21 - 2.98‡‡	1.83 - 3‡‡	1.71 - 2.48‡‡	2.30 - 3.17‡‡	2.54 - 3.21××	1.81 - 2.58‡‡	1.42 - 2.18‡	0.69 - 2.21‡	1.86 - 2.43‡‡	0.67 - 1.71‡	1.68 - 2.15††
Healthcare management	1.94 - 2.46‡‡	1.37 - 1.76‡	1.80 - 2.28††	1.73 - 2.22††	2.34 - 2.65××	2.22 - 2.46‡‡	1.67 - 2.25††	1.80 - 2.20††	2.47 - 2.85××	2.44 - 2.81××	2.51 - 2.72××
Allocation of resources and technology market analysis	2.00 - 3.01‡‡	1.93 - 2.50‡‡	1.73 - 2.49‡‡	2.59 - 3.15××	2.74 - 3.18××	2.11 - 2.46‡‡	2.30 - 3.10‡‡	1.75 - 2.38‡‡	2.32 - 3.13‡‡	2.48 - 3.15××	1.86 - 2.30††
Epidemiologic methods 2	2.44 - 3.35××	2.44 - 3.55××	2.28 - 2.40‡‡	2.23 - 3.16‡‡	2.35 - 3.14××	1.89 - 2.46‡‡	1.98 - 2.35‡‡	2.24 - 2.45‡‡	2.79 - 2.96××	2.42 - 2.83××	1.70 - 2.35‡‡
Pharmaceuti-cal technology assessment	2.50 - 2.79××	1.78 - 2.39‡‡	1.70 - 2.17††	2.30 - 2.41‡‡	1.76 - 2.23††	1.61 - 2.10‡	1.50 - 2.12‡	1.65 - 2.13‡	1.24 - 1.62†	1.20 - 1.50†	1.37 - 1.64†
Hospital technologies assessment	2.48 - 2.88××	1.82 - 2.88‡‡	1.69 - 2.26††	1.79 - 2.30††	1.68 - 2.21††	1.67 - 1.82††	1.52 - 2.17‡	1.59 - 1.72‡	1.45 - 1.79‡	1.49 - 1.72‡	1.44 - 1.73‡
Evidence-based clinical decision-making	2.70 - 3.01××	1.69 - 1.99††	1.73 - 2.39‡‡	1.67 - 2.69‡‡	1.83 - 2.60‡‡	1.40 - 2.31‡	1.40 - 2.30‡	1.29 - 1.89‡	1.60 - 2.31‡	1.59 - 1.87‡	1.71 - 2.34‡‡
Health information technology management	1.51 - 2.39×	1.91 - 2.39‡‡	1.99 - 2.78‡‡	1.78 - 2.75‡‡	2.45 - 2.58××	1.72 - 2.25††	1.87 - 2.20††	1.88 - 2.21††	1.87 - 2.44‡‡	1.87 - 2.21††	1.82 - 2.25††
Policy analysis	1.76 - 2.27††	1.75 - 2.30††	2.34 - 2.68××	2.45 - 2.74××	2.46 - 2.74××	2.37 - 2.60××	2.23 - 2.40‡‡	2.19 - 2.37‡‡	2.43 - 2.75××	1.84 - 2.32††	2.07 - 2.35‡‡
Health systems and policies	1.70 - 2.44‡‡	2.22 - 2.47‡‡	2.22 - 3‡‡	1.72 - 2.52‡‡	2.31 - 2.58‡‡	2.11 - 2.72‡‡	1.90 - 2.43‡‡	1.70 - 2.40‡‡	1.94 - 2.85‡‡	1.71 - 2.21††	1.82 - 2.70‡‡
Statistical methods 1	1.40 - 1.74‡	1.49 - 1.85‡	2.24 - 3.26‡‡	2.14 - 2.45‡‡	2.43 - 3.20××	1.93 - 2.86‡‡	1.98 - 3‡‡	2.25 - 3.02‡‡	2.47 - 2.81××	2.43 - 3.23××	2.44 - 3.26a
Principles of epidemiology1	1.46 - 1.80‡	1.98 - 2.25††	1.72 - 2.17††	1.95 - 3.15‡‡	2.60 - 3.26××	1.95 - 3.14‡‡	1.44 - 2.31‡	1.62 - 2.18‡	1.77 - 2.25††	2.20 - 3.10‡‡	1.98 - 2.35‡‡
Health systems	1.27 - 1.45†	1.43 - 1.50†	1.83 - 2.49‡‡	2.49 - 3.15××	2.64 - 3.28××	2.21 - 2.56‡‡	2.30 - 3.10‡‡	2.75 - 3.38××	2.32 - 3.13‡‡	2.40 - 3.15××	1.89 - 2.30††
Health economics	2.37 - 2.64××	2.41 - 3.53××	1.71 - 2.38‡‡	2.242.45:c‡‡	2.53 - 3.20××	1.73 - 2.86‡‡	1.98 - 3‡‡	2.25 - 3.02‡‡	2.47 - 2.71××	2.46 - 3.63××	2.44 - 3.26××
Medical informatics	2.32 - 3.13‡‡	2.48 - 3.15××	1.39 - 1.68	2.24 - 2.45‡‡	2.33 - 3.30××	1.93 - 2.46‡‡	1.98 - 3‡‡	2.35 - 3.23××	2.57 - 2.61××	2.56 - 3.52××	2.54 - 3.32××
P-value Respondent groups	0.39	0.54	0.70	0.94	0.61	0.33	0.03	0.45	0.34	0.69	0.50

[a] †: unsatisfied, ‡: unsatisfied-average, ×: unsatisfied – satisfied, ††: average, ‡‡: average-satisfied, ××: satisfied.

5. Discussion

5.1. Purpose and Necessity

The purpose and necessity of this study were to determine the quality of the HTA curriculum. The results showed the curricula being defective in implementation elements (location, materials and resources, learning activities, teaching strategies and groupings) and design elements (goal, content, evaluation, and time) encountered several problems.

5.2. The Quality of Core Courses

According to Table 2 of the 11 core lessons, students did not give a good assessment for three courses, including principles of health technology assessment, systematic review and meta-analysis, and economic evaluation. It is of note that all of these courses are important lessons without which HTA is impossible. The problem with designing these lessons is the time allocated to them. When implementing the courses, the following were assessed as inefficient and problematic: elements of location, materials and resources, learning activities, teaching strategies, and groupings. After taking the three lessons stated above, apprenticeship is difficult. In this lesson, the time allocated to the learner does not seem appropriate. Moreover, other inefficient elements include learning activities, learning methods, and human resources. On the other hand, the whole core curriculum seems to be the priority for problems with learning techniques, and time and learning activities are other elements that should be considered.

Table 2. The Quality Status of The Results in HTA Courses a

Courses	Objectives	Content	Time	Evaluation	Space	Learning Activities	Teaching Techniques	Grouping	Human Resources	Educational Resources	Other Resources
Principles of health technology assessment	-	-	1 √	-	-	1 √	1 √	1 √	1 √	1 √	1 √
Systematic review and meta-analysis	-	-	1 √	-	-	1 √	1 √	1 √	1 √	1 √	1 √
Economic evaluation	-	-	1 √	-	-	1 √	1 √	1 √	1 √	1 √	1 √
Statistical methods 2	-	-	1 √	-	-	1 √	1 √	-	-	-	-
Apprenticeships	-	-	1 √	-	-	1 √	1 √	-	1 √	-	-
Qualitative research											
Knowledge translation	1 √	-	-	-	-	-	1 √	-	-	-	-
Medical device quality assurance and regulatory compliance	-	-	-	-	-	-	1 √	1 √	-	-	-
Healthcare management											
Allocation of resources and technology market analysis	-	-	-	-	-	-	1 √	-	-	-	-
Epidemiologic methods 2	-	1 √	-	-	-	-	1 √	-	-	-	-
Core courses percentage	0.09	0.09	0.45	0.00	0.00	0.45	0.82	0.36	0.36	0.27	0.27
Pharmaceutical technology assessment	-	-	-	-	-	-	-	-	-	-	-
Hospital technologies assessment	-	-	-	-	-	1 √	1 √	1 √	1 √	1 √	1 √
Evidence-based clinical decision-making	-	-	-	-	-	-	1	1 √	1 √	1 √	1 √

Health information technology management	-	-	-	-	-	1 √	1 √	1 √	1 √	1 √	1 √
Policy analysis	-	-	-	-	-	-	-	-	-	-	-
Health systems and policies	-	-	-	-	-	-	-	-	-	-	-
Health economics	-	-	-	-	-	-	-	-	-	-	-
Non-core courses percentage	0.00	0.00	0.00	0.00	0.00	0.33	0.50	0.50	0.50	0.50	0.50
Statistical methods 1	1 √	-	-	-	-	-	-	-	-	-	-
Principles of epidemiology	1 √	-	-	-	-	-	-	-	-	-	-
Health systems	1 √	-	-	-	-	-	-	-	-	-	-
Medical informatics	-	-	1 √	-	-	-	-	-	-	-	-
Compensatory courses percentage	0.75	0	0.25	0	0	0	0	0	0	0	0
Total percentage	0.19	0.05	0.29	0.00	0.00	0.35	0.61	0.36	0.36	0.31	0.31

[a] 1 √: Unfavorable quality status; -: Desirable and moderate quality status.

5.3. The Quality of Non-core Courses

About non-core courses, two evidence-based drug technology and medical evaluation lessons were reported as more problematic than other courses and there is a later phase of Hospital Technology Evaluation. The problems with these lessons, like the core ones, are not the design, but the way they are implemented.

5.4. The Quality of Compensatory Courses

Contrary to the courses of the two sections, this factor considers the majority of courses in this section, especially the principles of epidemiology 1, the statistical methods 1, and the health systems in the main elements (including the inappropriate goal). In other words, all problems of the learners are focused on the purpose and the necessity of taking these units. However, no significant problem was identified in the implementation and implementation elements. It is of note that the viewpoints of professors are different from those of students about the elements of teaching strategies. This difference can be attributed to the fact that professors have given higher grade points to the use of appropriate and diverse strategies and skills in teaching if the students were against this view. This study, like the Pascal study on the evaluation of the curriculum in 2002, emphasized the issues such as the use of training, the removal of barriers to implementation, the training of expert human resources, and access to resources (14).

5.5. Strengths and Weakness of the Designed Program

(1) Using the views of all professors and students and the needs assessment in different universities, (2) Being the first in Iran and supporting the continuous improvement of quality, (3) Providing a comprehensive and transparent analysis, and (4) Appraising the program in detail and terms of the different types of curricula in different sections. On the other hand, one of the weaknesses of this study is the lack of long-term planning for continuous evaluation and problems in implementing it.

5.6. According to the Results of This Study, the Following is Suggested for Improving the Health Education Assessment Program

(1) Eliminating the unaligned courses (such as compensatory courses, except medical information courses and health information management courses) and offering more related courses instead; (2) ignoring repeatability and up-to-date contents of the subject curriculum; (3) assigning theoretical and practical training hours to major and core courses (such as systematic review and meta-analysis, medical information systems, principles of health technology assessment, epidemiologic methods 2, apprenticeships, statistical methods 1, and economic evaluation); (4) Sufficiency and comprehensiveness of evaluation methods with content taught; (5) Creating or increasing the practical unit for core courses and the need for the fit and variety of teaching methods for instructors to be taught (teaching techniques element has been found to be inappropriate in the majority of non-core and core courses); (6) to submit activities and assignments to students and obliging students to provide educational activities such as criticizing various types of articles according to the type of study and engaging students in research projects (learning activities element has been found to be inappropriate in the majority of non-core and core courses); (7) the formation of the student and student active teams and HTA projects in group; (8) High quality of classrooms in terms of area,

light, sound, educational facilities and visual appeal; (9) Providing experts and capable human resources and adequate access to a variety of resources, including books and educational materials and training (especially in core and non-core courses).

5.7. Conclusions

The results of this study showed that more than half of the students expressed satisfaction with the study curriculum and had good status in most of the curriculum sections, especially the core sections in the design elements. Nevertheless, there are some inefficiencies in the implementation method and the elements of the curriculum, including elements of learning activities, teaching strategies, grouping, and resources. Therefore, it is suggested to make some adjustments to correct inappropriate elements and eliminate barriers to implementation, which ultimately increases the ability and practical skills of the beneficiary groups.

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Footnote

Appendix 1. Internal Consistency and Stability of the Questionnaire Using Cronbach Alpha and Test-Post Test Elements of the Curriculum

Curriculum Criteria	Questions and Concepts That Guide the Variables	Stability Of Ours Examination After It (Internal Correlation Coefficient)	Cronbach Alpha	95% Confidence Interval		P-Value
				Low Interval	High Interval	Respondent Groups
Objectives	Are the objectives of different courses consistent with general objectives (training of researchers and specialists in HTA studies)?	0.68	0.70	0/66	0/79	0.30
The content	Is the educational content contained in the curriculum adequate and complete for each of the different courses?	0.64	0.76	0/58	0/78	0.44
Time	Is sufficient time allocated to the type of course?	0.72	0.71	0/66	0/83	0.31
Evaluation	Are the evaluation criteria recorded in the curriculum sufficient to evaluate different courses?	0.71	0.82	0/65	0/78	0.47
Place	Are the courses of practice appropriate to the type and nature of different lessons? (Such as access to the Internet and the site for courses on medical information systems, systematic review studies, or research institutes for study lessons ...)	0.94	0.80	0/85	0/99	0.50
Learning activities	Have students been involved in learning and classroom activities tailored to the type of study? (Such as holding a seminar and journal club, a problem-solving method, etc.)	0.72	0.77	0/68	0/81	0.47
Teaching strategies	Is it necessary to use appropriate and proportionate training strategies (e.g., practical / theoretical / variety of teaching methods, etc.)	0.71	0.78	0/65	0/78	0.39
Grouping	Is it necessary to create active educational teams?	0.80	0.80	0/78	0/88	0.41
Human resources	Are there different types of resources (human resources, educational equipment, educational aid and other resources) for different courses?	0.74	0.81	0/65	0/89	0.33
Educational resources		0.73	0.72	0/66	0/78	0.39
Other resources		0.71	0.73	0/65	0/81	0.34

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