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CURRICULUM

Iranian Pediatric Hematology and Oncology Fellowship Curriculum: Updated Version

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ABSTRACT

Background: Educational evaluation is a broad concept that is related to all elements of the educational system. This concept is the result of the interaction of all values that are implemented with different titles and forms inside and outside the educational system to increase the performance of the educational system. The field of pediatric hematology and oncology is one that is constantly evolving due to extensive and numerous researches in various fields. These changes must be in line with changes in the health care delivery system. In this study, among the decision models, the CIPP model which is an evaluation model for curriculum evaluation given by Stufflebeam in 1983 which includes four elements: C- Context, I- Input, P- Process and P- Product., was selected to evaluate the educational curriculum of Iranian pediatric hematology and oncology fellowship.

Methods: The present study has two quantitative and qualitative aspects and a quantitative cross-sectional, descriptive-analytical study. This analysis was conducted in 2021 by the strategic group of the Iranian pediatric hematology and oncology association. Its statistical population consisted of members of this association. Most members have a degree in pediatric hematology and oncology. The research was conducted by census method. Data were collected using a researcher-made questionnaire. In general, the training course was examined in 4 areas of education and research, hardware facilities of the training and current environment, and professional abilities other than the content of the course. The efficacy of the evaluation questionnaire of the Pediatric hematology and oncology fellowship course was a combination of open and closed questions based on the "Kirk Patrick evaluation model". This questionnaire had 20 questions. The internal evaluation based on Cronbach's alpha was 0.92. The items surveyed in the questionnaire were: learning modern medical principles such as evidence-based medicine and clinical reasoning, learning the principles of medical ethics, study skills, understanding of legal procedures, ability to electronically research and adequacy of educational subjects. Satisfaction of the faculty members, students 'satisfaction and the need for supplementary courses, the current method of evaluating students' communication skills, the scientific ability of the eligible faculty in teaching current topics and participation in educating the students were among the other items of the questionnaire.

Results: In the internal validity study, Cronbach's alpha coefficient of 0.92 was obtained for the current situation and 0.96 for the optimal situation. Descriptive statistics (mean and standard deviation) and one-group and independent t-test were used to analyze the data. Findings indicated that there was a significant difference between the current and desired status of free and absentee university exams in the areas of purpose, design, implementation, modification and feedback and the three components of each of these axes. According to the obtained results, changing the current educational curriculum of the subspecialty fellowship in pediatric blood and cancer is necessary and inevitable.

Conclusion: Corrective suggestions for writing a new curriculum in accordance with modern sciences and medical needs of the country were extracted and applied in the new curriculum.

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Introduction

Increasing advances in science and expansion of medical knowledge necessitates changes in the current curriculums. This need is much more felt in the medical education system. Curriculum revision leads to a more practical solution and further development in medical research and technology, as well as more effective protocols for diagnosis and treatment. The mission of higher education in the field of health is to train committed and skilled human resources based on national needs. By reviewing training programs, innovative steps in medical education are taken. The field of pediatric hematology and oncology is a science that has undergone changes and evolutions in a short period of time with the formation of numerous researches and advances. Also, this new research should cause changes in the quality of health services in the country, so it needs to be constantly revised and updated. It has been about 11 years since the last revision of the pediatric hematology and oncology training program in Iran by its committee.

The members of this committee, by reviewing the educational programs of the specialized educational centers and adapting them to educational programs in different countries of the world between 1990 and 2000, made fundamental reforms in the flow program of pediatric hematology and oncology subspeciality.

Due to significant scientific advances in the field of pediatric hematology and oncology and the emergence of new topics in medical science since 1990 such as evidence-based medicine and electronic search and the development of new methods of sub-specialized flow education and the emergence of new sub-branches, a group of experts in Iranian Pediatric Hematology and Oncology Society decided to review the curriculum.

Materials and Methods

Part 1 (Meeting of the Strategic Committee for Iranian Pediatric Hematology and Oncology Socety): The research at this stage was a qualitative study based on a focused group discussion. This method is based on the confrontation of ideas and the organization of ideas of the group members. This study was conducted in July 2020 for one month (60 people-hours) by a working group of members of the strategic committee of the Iranian Pediatric Hematology and Oncology Society. All members of this meeting were members of the strategic committee of pediatric hematology and oncology, Ministry of Health and Medical Education of Iran.

First of all, the current status of pediatric hematology and oncology fellowship in terms of education was examined through internal and external SWOT analysis. In this way, strengths and opportunities and weaknesses were identified. Questions were answered in group discussions and opinions were summarized. The importance of the issues and the extent of their impact were determined by all members of the committee. Analysis of internal conditions and comparison with foreign countries was performed to identify the organizational position of the subspecialty of pediatric hematology and oncology in Iran.

Part 2: (Survey of all members of the Iranian Pediatric Hematology and Oncology Society): This step was a descriptive and analytical cross-sectional study conducted in 1399. Data collection tool was a researcher-made questionnaire with demographic variables including 21 questions with 6 main items (purpose, content). Teaching method, evaluation method, faculty educational facilities which was made using the Likert scale based on the findings of a qualitative study in relation to the competencies required for a subspecialty.

The statistical population of the study included all physicians specializing in the pediatric hematology and oncology in Iran. Data were collected by concensus method. The questionnaires were distributed among the members of the Iranian Pediatric Hematology and Oncology Society via WhatsApp and email. After collecting the questionnaires completed by the members of the association, incomplete questionnaires were excluded from the study.

A four-choice weight questionnaire was used to analyze the quantitative data. To determine the desirability of each variable, the score of each question based on the Nanley scale was considered in four qualitative levels which included desirable (4-5), relatively desirable, (3.399), relatively undesirable ().2-99)./2-) and undesirable (1-99/1-99). Data were analyzed in two sections: descriptive statistics and inferential statistics.

Research Questions

1- What is the current situation and what is the ideal state of the current curriculum of Iranian pediatric hematology and oncology?

2- What are the sub-objectives in the studied fields?

3- What is the participation in teaching assistants?

Learning modern medical principles such as evidence-based medicine and clinical reasoning and learning the principles of medical ethics, Medical resource study skills, Understanding legal procedures, Ability to research and search electronically, Adequacy of educational subjects, satisfaction with teaching faculty, supplementary skills of the faculty members, need to create related courses, current method of scientific and professional evaluation of fellows, scientific ability of faculty members to teach new scientific topics.

This research was applied in terms of objectives and in terms of nature and descriptive questions and surveys. The statistical population included members of the Iranian Pediatric Hematology and Oncology Association. The research tool for data collection was a researcher-made questionnaire with 28 items with Cronbach's alpha of 0.92 in the current situation and 0.96 in the optimal situation. Descriptive statistics (mean, standard deviation) and one-group and independent t-test were used to analyze the statistical data. To collect information from the members of the association, 62 questionnaires were sent to the members of the Iranian Pediatric Hematology and Oncology Association via email and WhatsApp. After removing the incomplete questionnaires, the completed cases were carefully analyzed. The findings were reviewed in two parts: a. Descriptive analysis (mean

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and standard deviation) and inferential one-group t-test of each variable and b. data analysis

Comparison of the two conditions was performed by independent t-test.

Ethical considerations were applied in conducting the research. It was not mandatory to complete demographics in order to keep participants' identities confident and completely free and fearless.

The Attachment

How to standardize the second phase questionnaire:

Training course effectiveness evaluation questionnaire (based on Kirk Patrick model)

The effectiveness evaluation questionnaire of the subspeciailty course for pediatric hematology and oncology is a combination of open and closed questions and is based on the Kirk Patrick evaluation model, which has 20 questions.

Evaluation of the current pediatric hematology and oncology subspeciality curriculum is the gathering of several experienced and responsible people with some experts to find a logical and principled solution in the field of professional issues and problems and increase skills.

Participants in the evaluation of the training course should, if possible, have a subspecialty degree or graduate soon. Course evaluation is a problem-solving method that uses a variety of group discussion techniques to engage individuals. New training planning during the current training evaluation course is based on what has already been taught in the current training course.

Operational definition of questionnaire variables

In the present study, the effectiveness of the current training course on pediatric hematology and oncology subspeciality fellowship was measured using 20 questions designed with a 5-point Likert scale and 2 open-ended questions.

Designing Questions

Questions were collected and a bank of questions was prepared from the members of the Curriculum Review Board (160 questions) and 20 questions were selected from these which were comprehensive and restrictive (based on the validity of the questions). Blood and pediatric cancer).

Validation Confirmation

The designed questionnaire was shown to 2 experienced staff of medical statistics, and they were given a general opinion without giving a score to the questions.

Pre-test and Validity Assessment (Reliability Questionnaire)

After reviewing the research questions, reviewing the background, and presenting a theoretical framework or theoretical model, the questionnaire questions were asked, and to eliminate the defects (and ambiguisities) in the questionnaire, the following methods were selected and implemented. After referring to the faculty members and experts, it was corrected, and after ensuring the appropriateness of its validity coefficient, we reproduced it and provided the respondents with the reasons for answering. Of course, 20% of the questionnaires were evaluated as a preliminary pilot between the respondents, and its validity was evaluated by the respondents.

Indicators to be evaluated through a questionnaire:

1. Current educational content
2. Current teaching method
3- Current evaluation method
4- Acquiring non-teaching abilities (medical ethics, research-electronic, search-teaching)
5. Non-educational conditions of study
6. The ability of the current faculty members.
7- Educational effectiveness

Expertise was performed in 4 areas of context, process, input and product by CIPP method.

Introduction to CIPP Evaluation Pattern (CIPP)

The origin of CIPP and its history

Daniel Stufflebeam provided a comprehensive definition of evaluation, given the ineffectiveness of traditional evaluation strategies such as standardized tests: In this definition, evaluation is a continuous process that has three stages. In the determination phase, the evaluator tries to clearly state what the decision-makers need to make the decision. In the acquisition phase, the necessary information about the program is collected, organized, and analyzed. In the preparation phase, from the combination of information obtained and analyzed, the findings that can be used to make decisions about the program are provided in a descriptive and judgmental manner and are provided to the audience for practical actions aimed at improving and modifying the program.

Objectives of SIP Evaluation Model

Evaluation model arising from a management-based approach considers the objectives of SIP evaluation to be the following:

1- The purpose of SIP evaluation model is not to prove but more for the growth and development of programs

2- Creating and preparing useful information for different aspects of decisions

3- Helping people to judge and improve the multiple values of the educational program or educational subject

4- To help grow and improve the policies and guidelines of the programs.

Types of evaluation methods in CIP model:

A: Context evaluation:

Situational assessment means determining the needs for deciding on the goals of the program and identifying the issues that provide a basic basis for formulating goals that will improve the program.

B: Input evaluation:

The main purpose of this evaluation is to develop a plan to make educational changes and achieve the set goals in the situation evaluation stage. In this evaluation, all the effective factors to achieve the goals of the program are examined to select or formulate a program that achieves the best objectives set in the field evaluation.

A: process evaluation:

After designing the program, how to implement the program will be evaluated. In this evaluation, an attempt is made to determine the answers to such questions.

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Is the program running well?
What are the obstacles to its success?
What changes are necessary?
Answering these questions helps to control and guide implementation practices.
D: Product evaluation:
At this stage, the results of the program are evaluated. The results are then compared with the goals of the program.

In our study, the ability of faculty members in training and research skills in the field of educational software and in the field of educational hardware of educational facilities and requirements for training centers as well as financial conditions of students were evaluated. Data were collected through a questionnaire consisting of multiple choice questions which were divided into five ranks of very high, high, medium, low and very low based on the Likert scale, which included numbers from 1 to 5.

The items to be examined in the questionnaire were:
Learning the principles of modern medicine such as evidence-based medicine and clinical reasoning
Learning the principles of medical ethics
Study skills lessons
Understand legal procedures
Ability to conduct research and electronic search
Adequacy of educational topics
Satisfaction with teacher training
The degree of scientific dependence on professors after graduation
Need for additional courses
The current method of assessing flows
News announcement skills
The scientific ability of appropriate professors to teach current topics
Participate in the training of assistants
If the score of the question is in the range of:
0-0.99 Very low (very undesirable)
1-1.99 low (undesirable)
2-2.99 Medium (acceptable)
3-3.99 High (Optimal)
4-5Many (very desirable)

Formal and content validity were used to assess the validity of the questionnaires. The questions of the questionnaire were matched with the subject and objectives of the research by experts. To determine the reliability of the questionnaires, Cronbach's alpha coefficient was estimated.

The obtained data were analyzed by SPSS software version 21. In this study, descriptive statistics (mean, frequency, percentage and standard deviation) were used.

The items to be examined in the questionnaire were:
Learning the principles of modern medicine such as evidence-based medicine and clinical reasoning
Learning the principles of medical ethics
Study skills lessons
Understand legal procedures
Ability to conduct research and electronic search
Adequacy of educational topics
Satisfaction with teacher training
The degree of scientific dependence on professors after graduation
Need for additional courses
Current method of assessing flows
News announcement skills
The scientific ability of appropriate professors to teach current topics
Participate in the training of assistants
If the score of the question is in the range of:
0-.99 Very low (very undesirable)
1-1.99 low (undesirable)
2-2.99 Medium (acceptable)
3-3.99 High (Optimal)
4-5 Many (very desirable)

To assess the validity of the questionnaires, face and content validity was used and in terms of compliance of the questionnaire questions with the subject and objectives of the research, it was approved by experts. Cronbach's alpha coefficient was used to determine the reliability of the questionnaires. The obtained data were analyzed using SPSS software. Descriptive statistics (mean, frequency, percentage and standard deviation) were used to analyze the data obtained from this study.

Results

Findings of the study regarding the desirability of the evaluated factors were as follows:

Objectives of the training course: The total score was 2.68±0.5. Intermediate status indicator (Context in general. Training course input: Score in total, the average score of 2.1±0.3 was obtained, which indicates the average input status (Course input).

Course process: The total score was 2.45±0.2, which indicates the relatively favorable situation of the process ("Process is the course as a whole." It was found that it represents the relatively favorable output of the product as a whole.

Total evaluation factors were based on the CIPP model. The grade point average in the questionnaire was: The average score for learning the principles of modern medicine, such as evidence-based medicine and clinical reasoning 2.1±0.19 (average).

The average score of systematic learning of medical ethics principles is 2.2±0.1 (average) (degree of freedom 285-degree of significance zero-difference between mean and -0.501). Mean score of study skills of courses 3.5±0.2 (desirable) (degree of freedom 285-degree of significance zero-mean difference and 0.947).

Mean understanding of legal procedures 2.77±0.5 (average) (degree of freedom 285-degree of significance zero-difference between mean and -0.065).

The average ability of research and electronic search is 3.4±0.4 (optimal) (degree of freedom -285, degree of significance zero-mean difference and 0.002)

Average adequacy of educational topics 3.85±0.4 (optimal) (degree of freedom 285-degree of significance zero-difference between mean and -0.461).

Mean satisfaction of teachers' training 2.9±0.1 (average) (degree of freedom 285-degree of significance zero-difference between mean and -1.47).

The average degree of scientific dependence on

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professors after graduation is 2.88±0.5(average) (degree of freedom 285-degree of significance zero-average difference and -0.458). The average need for additional courses is 4.8±0.23 (very desirable /very high) (degree of freedom 285-degree of significance zero difference between mean and 0.559).

The average of the current method of evaluating flows 3.4±0.4 (very unfavorable)) (degree of freedom 285-degree of significance zero-difference between mean and -0.624). The average skill of announcing a news item is 2.8±1.2(average)) (degree of freedom 285-degree of significance zero-difference between mean and -0.501). The average scientific ability of appropriate professors to teach current topics is 3.85±1.1 (desirable) (degree of freedom 285-degree of significance zero-average difference and 0.001). Average participation in the training of assistants 3.92±0.95 (desirable) (degree of freedom -285degree of significance zero-difference between mean and -0.981). Open questions evaluation section and written suggestions:

In this field, a total of 13 suggestions were extracted from the descriptive questions at the end of the questionnaire.

An independent t-test was used to analyze the extracted information. A comparison was made between the ideal conditions of the subspecialty flow education and the current conditions. Newly defined and flow comments on the variables of the adequacy of educational topics (degree of freedom 277 and, t=-22.4442 and SD=-0.551, SE=0.331, Sig=0.00) and the status of the ability of research and electronic search) degree of freedom -277 and t=-22.442 and SD=0.551, SE=0.331 (Sig=0.00 Did not exist and in other words the situation was favorable).

Based on the comparison of the mean of the paired t-sample of the paired t test, between the curriculum status of the pediatric subspecialty blood and cancer course based on the views of the flows with the ideal educational status about the variables of the current flow evaluation method (degree of freedom -277, SE=Sig=0.00) and learning the principles of modern medicine such as evidence-based medicine and clinical reasoning) degree of freedom -277 and 18.09.02 - t=and SD=0.576, SE=0.035, Sig=0.00 and mean=3.972) and systematic learning of the principles of medical ethics) degree of freedom 277 and -22.442, t=and SD=0.531, SE=0. 331, Sig=0.00, mean=2.69) and understanding of legal procedures) degree of freedom 277 and -22.442, t=0. 551 and SD=SE=0.331 Sig=0.00) and satisfaction with professors' education (degree of freedom 277 and --22/442, t=0.551, SD=0.331=Sig=0.00 and the degree of scientific dependence on professors after graduation) .Degree of freedom 277 and -22/442, t=0.551 and SD=0.331, SE=0.00, Sig=0.00 and average=3.891) and skill of announcing the news) Degree of freedom 277 and t=-16/432 and SD=0.551, SE=0.766, Sig=0.00 and mean=2.715) There was a significant relationship and in other words the conditions were not favorable. (P=0.745). The extracted information and its analysis showed that there was no significant difference between the status of the ideal curriculum of the subspecialty course in pediatrics and blood cancer based on the variable of the university of study. Which was a sign of relative satisfaction of the flows from the centers of the same size (degree of freedom 277 and t=-22.682 and SD=0.472, SE=0.028, Sig=0.00 and average=2.659).

The results showed that in the component of fellow welfare facilities, among the four universities, Shiraz medical sciences was better than the rest. In this aspect, between the university of Medical Sciences, ANOVA test in content components (P=0.293), teaching method, (P=0.017), evaluation method (P=0.488), educational environment and facilities (P=0.240) There was no significant difference between the faculty members (P=0.176) of 4 sub-specialized fellow training centers in the country. Findings of the study regarding the desirability of the evaluated factors were as follows:

In objectives of the training course: A total score of 3.64 was obtained.

This Indicated the relatively favorable situation of the context (Context in general. Input of the training course: The total score was 2.92, which indicates the relatively favorable status of the input of the course).

Course process: Score/A total score of 3.20 was obtained, which indicated the relatively favorable status of the process (Process is the course as a whole. (Product) is the course as a whole.

Total evaluation factors based on CIPP model

The grade point average in the questionnaire were:

Learning the principles of modern medicine such as evidence-based medicine and clinical reasoning 1.2 (average)

Systematic learning of the principles of medical ethics 2/2 (average)

Study skills Lessons 3.5 (Optimal)

Understanding of legal procedures 2.77 (average)

Ability to research and search electronically 3.4 (desirable)

Adequacy of educational topics 3.85 (desirable)

Satisfaction with teacher training 2.9 (average)

Degree of scientific dependence on professors after graduation 2.88 (average)

Need for additional courses 4.8 (very desirable / very expensive)

Current method of assessing flows 1.4 (very unfavorable)

News announcement skills 2.8 (average)

Scientific ability of appropriate professors to teach current topics 3.85 (desirable)

Participation in training of assistants 3.92 (desirable)

Open questions evaluation section and written suggestions:

In this field, a total of 13 suggestions were extracted from the descriptive questions at the end of the questionnaire.

Discussion

Advances in medical science and the emergence of new teaching methods and the need to learn new medicine and increase the incidence of new and diverse diseases, changes in the educational pattern of medical disciplines are inevitable.

Continuous changes in the health care system and technology have caused the training of physicians and nurses to be constantly evaluated and reviewed and

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sometimes fundamentally changed. The process of compiling and designing the curriculum is a dynamic process and the owners of the educational process (faculty members) in the medical education system are responsible for reviewing and preparing the curriculum. Therefore, they recognize the principles and ideas of education. The main advantage of evaluating a training course is that with a systematic approach, the objectives, context, input, processes and products of that course are evaluated and the strengths and weaknesses of the course are identified, and this can help to make the right decisions and policies.

The outbreak of coronavirus caused inevitable changes in daily life and caused problems in normal lifestyles, including educational and therapeutic environments. Therefore, the role of medical universities in training skilled and efficient forces to serve the people of the community became more important due to the long-term effects of this epidemic. In one study, the need to change educational programs from the perspective of the medical community was examined, which showed that the academic community should work on implementing educational and practical strategies to optimize educational programs in a forward-looking and creative way. Therefore, in this crisis, it is necessary to change the medical disciplines due to the new conditions. An efficient education system meets the goals and needs of society.[1, 2]

In our study, after consulting with members of the Iranian Pediatric Hematology and Oncology Association, we found that due to the rapid developments in the science of pediatric hematology and oncology, the need to learn and teach new topics such as stem cell transplantation is strongly felt. Radiotherapy and blood bank, Molecular pathology, psychology, palliative medicine and pediatric Imaging as new topics should be added to the curriculum.

In another study on changing the nursing education program, it was found that in the field of nursing, the active participation of professors is necessary for the development of the curriculum from the beginning of the change process. Other effective factors in improving curriculum planning are open thinking and thoughtful considerations and careful attention to the influential factors in education. In this study, paying attention to the individual and collective values of teachers, the amount of change required in the curriculum and also paying attention to the time period of these changes and reforms, have been effective factors in satisfying teachers. Finally, in order to improve the curriculum, the participation and support of all professors and teaching staff of the university should be done and the scope of these changes and the appropriate time for their implementation should be clearly and objectively explained.

In this study, the members of the Iranian Pediatric Hematology and Oncology Assocition agreed to change the curriculum and add new topics to the curriculum.

In medical education, the hidden curriculum has the greatest impact in clinical education settings. There are several interpretations of the hidden curriculum. Heferti and Frank have stated in medical education. This curriculum is a process that is currently used to convey the culture and ethics and norms and rules of educational departments. This affects the feelings and behaviors of medical students in the clinical education environment. Thus, mainly acceptable values, beliefs and behaviors are increasingly transmitted to learners in medical education through a hidden curriculum.[3]

Implementation of the modified curriculum should be in line with new teaching methods such as problem-based learning, professional task-based learning, leadership ability, teamwork and cooperation, responsibility and patience and management of people, and continuous effort, study and research. The medical education curriculum should be designed in such a way that students have easy access to scientific concepts and develop the ability to use principles and skills wisely in solving medical and diagnostic problems.[4] In the curriculum change program for pediatric blood and cancer, new teaching methods were discussed by university faculty members and members of the association, and patient-centered education was reviewed by professors and members of the association. Medical ethics, communication, human, behavioral, social and economic values, knowledge, skills, attitudes, issues, and knowing the legal procedures and behaviors required for future skills are essential for medicine. In another study conducted at the Army University of Medical Sciences, the results showed that the status of the general medicine curriculum is relatively unfavorable.[5] In another study by Yazdchi et al., the current status of education and research in general medicine from the perspective of medical interns at Tabriz University of Medical Sciences is studied.[6]

In the traditional curriculum of medical students, due to the dispersion and separation of disciplines in basic education and the relatively long interval of specialized content in different clinical courses, forgetfulness, lack of deep learning and multifaceted medical issues occur in students. Therefore, the integration of materials that are presented separately and in separate disciplines in academic medical education courses requires a combined curriculum. This goal can be achieved in the form of organ based training blocks and in the form of clinical problem solving, and this depends on the efficiency and art of the educational groups.[7] In evaluating pediatric hematology and oncology curricullae, participating members believed that rotations such as blood transfusion, radiotherapy, and molecular pathology should be introduced in the second year of the fellowship to improve and sustain theoretical and practical content and the learning process.

In a study conducted in 2011 at Ilam University of Medical Sciences to evaluate the quality of teaching of clinical professors, many objections were raised by students and experts to the current educational method.[8] In our study, members of the association expressed satisfaction with the teaching situation of the faculties. The degree of scientific dependence on the faculties of the universities after graduation was also assessed at a moderate level. This was while the scientific ability of suitable professors to teach current topics was evaluated at the desired level.

Other studies have shown that most general medical students do not receive sufficient training to learn

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evidence-based medicine and do not have much knowledge in this area. Based on the findings of this study, training in English, study skills, communication skills, professional skills and time management, how to study medical courses, evidence-based medical skills, information literacy skills, familiarity with system requirements Health and familiarity with the medical profession were relatively unfavorable when entering medical school.[9]

In a study with the classic Delphi technique, which was performed three times and completely on PhD students in nursing, students and faculty members with a doctorate in nursing from Tabriz University of Medical Sciences were surveyed from October 2016 to June 2017. The doctoral curriculum was tailored to the needs of the society, health system, nursing profession and even the professors/learners themselves. In the study of Tabriz, avoiding and neglecting the main nature of clinical care in the field of nursing and addressing relatively marginal issues was the main challenge of the nursing doctoral curriculum.[10] Teaching thalassemia, hemoglobinopathy and coagulation disorders is optional in Tehran. In our study, the participating members suggest that this 4-month rotation defect be eliminated during a 3-year training course between Tehran and Shiraz and Ahvaz centers.

Another study was conducted to investigate the challenges of implementing a general dentistry in the curriculum from the perspective of medical students from Isfahan University of Medical Sciences. This research was conducted in the form of conventional qualitative content analysis and through data collection with group interviews. Executive challenges (inadequacy and inexperience in implementation, lack of planning for implementation and lack of coordination of professors in providing integrated courses); Educational challenges (lack of sufficient information resources to justify students, limited teaching time, impossibility of employing specialized professors in new courses, lack of fairness in teaching, inappropriate integration, use of non-dominant and untrained assistants in student education, presentation method and inappropriate content In new content) were. Other challenges included non-compliance with educational and introductory prerequisites, non-compliance with medical education standards by faculty members. Courses, physical facilities and adequate school were other problems.[11]

It was suggested that research and statistical skills and presentation of scientific articles should be educated in a classic way. Insufficient knowledge of the faculty on new topics such as molecular pathology was also mentioned as one of the educational challenges. This problem was approved in the working group of the Iranian Pediatric Hematology and Oncology Society. Also, financial problems of the pediatric hematology and oncology fellows during the 3-year educational course are one of the influential issues. The results of another study showed that new assessment methods including homework, performance tests, portfolio, methods for measuring problem-solving skills and self-assessment by medical students are relatively unfavorable in the clinical education departments and have a relatively unfavorable situation.[12]Another study in 2003 examined the similarities and differences between educational goals and curriculum models for medical students in Iran and 6 other countries (UK, Canada, Australia, Denmark, USA, and South Africa). Data analysis showed that due to the similarity of the ultimate goal of the medical education worldwide in the overall goals of the medical course in Iran and the 6 countries studied, at the same time its observance is very similar and there is little difference in quality. This goal is similar to training people with deep thinking and long-term learning skills. The existence of such goals overshadows the patterns used in the curriculum, teaching methods and assessment. Curriculum models in the 6 countries studied according to the general objectives include models based on human characteristics, social activities and individual interests, but the Iranian curriculum is models based on university courses and special competencies. In addition, there are discrepancies between the objectives and courses offered in the course in Iran, including the lack of management and communication issues, disregard for familiarity with the concepts of educational sciences, lack of conditions for research and identification of students in Health field noted. Problems, he noted. In this study, the content of the curricula of 6 universities and pediatric hematology and oncology centers due to the similarity of the medical education system in Iran and the United States (University of Auckland-University of Los Angeles-New York-Cincinnati-MD) Anderson-St. Jude) was examined and it was found that many Educational topics are similar in Iran and the United States, but in Iran there is no significant tendency to use new methods in designing exam questions.

In a study on the curriculum of dental students of Shahid Beheshti University of Medical Sciences, which was conducted as an educational evaluation of two approved curricula in 2017 and 2012, the CIPP model (context, input, process, and product) was used. The statistical population included all final year dental students of this university. In this study, a questionnaire was used that included visual, auditory, doing and ability to do indicators. Eventually it became clear that the 2012 curriculum was more focused on listening and seeing students. However, the 2017 curriculum focused more on student performance.[13, 14]

Regarding the implementation of the educational review process, it was raised whether the program is implemented well?

What are the barriers to curriculum success?

What changes are needed in the curriculum?

One of the obstacles was financial problems and declining student incomes. Another reason was that teachers did not have enough time for direct instruction.

Conclusion

According to the results of the study on pediatric hematology and oncology fellowship course in Iranian children, the situation is not favorable and its correction

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and optimization in some cases seems necessary according to the current needs of society and the country.

In this study, current educational methods of evaluation of fellowship in pediatric hematology and oncology were studied according to the needs of the health system in Iranian children. The Iranian Pediatric Hematology and Oncology Society, as the principal of the Pediatric Blood and Cancer Subspecialty Fellowship in Iran, is in charge of properly guiding the Pediatric Blood and Cancer Subspeciality Education System and is responsible for making new changes in the educational program.

Suggestions

- Reviewing the course titles in short intervals and updating them according to the relationship between the content of the courses and the medical needs of the country in the field of pediatric blood and cancer and hematology of stem cell transplantation and related sciences and creating a fit between the curriculum and medical needs of the students. Specializing in pediatric blood and cancer and meeting their expectations and needs

1- Changing the course titles in accordance with the objectives of the field

2- Adding new topics according to the current world knowledge to educational topics including molecular pathology of cancers, immunotherapy, palliative medicine, pain management, news reporting skills, forensic medicine and legal procedures in medicine

3- Increasing the educational and research budget of subspecialty flow training centers, the budget of extracurricular activities, and the per capita welfare and monthly salaries of flows;

4- Improving the scientific ability of professors through continuous education and training courses inside and outside the country

5- Providing the ground for the participation of the students in solving the problems of the groups and the decision-making by the managers of the groups and the participation of the students in educating the students (part of the evaluation of the students should be through a survey of students)

6- Providing arrangements by the department manager for professors and students to use short-term study opportunities

7- Modifying the distribution of subspecialty flows of graduates in the country's flow training centers and rotation of flows among different centers

8- Increasing the duration of stem cell transplantation to 3-6 months

9- Adding essay writing course and increasing the rotation course of radiology-radiotherapy and medical and herbal medicine in cancer-blood transfusion

10- Performing practical work by flows in hematology laboratory

11- Assessing the flows during the course has a greater share than the end-of-course exam.

12- Holding a club journal and analyzing articles

13- Using the book practical algorithm in pediatric hematology & oncology in teaching flows

14- Using the professional evaluation and medical ethics checklist to evaluate professors

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References

1. Zamani Z, Asadi I, Ameri Z. Correction necessity in education curriculum of medical sciences according to COVID-19. Horizon of Medical Education Development. 2021. doi:10.22038 / hmed.2021.56291.1135
2. Mohammadzadeh S, Jafari P, Jamali A, Hosseini MA. Context conditions factors for lifelong learning in nursing education. MEDICAL SCIENCES 2019, 29(4): 357-69. doi: 10.29252/iau.29.4.357.
3. Chehre Gosha M, Kalantari S, Joybari L, Araghian Mojarad F. Hidden curriculum management using group rethinking to achieve clinical competence. Studies in Development of Medical Education. 2015; 12(5):691-2.
4. Dibavajari T, Yamini Dozi Sorkhabi M, Arefi M, Fardanesh H. Conceptualization of higher education curriculum planning patterns (experiences and achievements). Research in Curriculum Planning. 2011;2(3): 48-62. Article ID: JR_JSR-2-3_005.
5. Mohammadi Mehr M. The study of the traditional curriculum of general medicine program from the students prespective. Journal of Nurse and Physician within War. 2015; 8(3):25-33.
6. Alizadeh M, Sayyah Melli M. The view of medical interns about the problems of clinical education of Tabriz Medical School and the solutions to them. Iranian Journal of Medical Education. 2005; 5(14).
7. Zolfaghari B. Planning a change in medical education. Iranian Journal of Medical Education. 2010; 10(5).
8. Mirzaei A, Shamsizad M, Mirzaei Z, Nasrollahi A.The views of professors and students of Ilam University of Medical Sciences regarding the evaluation system of professors by students. National Conference on Medical Education.2014; 15.
9. Karimian Z, Kojouri J, Saqib MM. A Review Of Evidenced-Based Medical Education At Universities In And Outside Iran. INTERDISCIPLINARY JOURNAL OF VIRTUAL LEARNING IN MEDICAL SCIENCES (IJVLMS). 2015; 6(1): 64- 75.
10. Sahebi Hagh MH, Khadivi A, Soheili A, Moqbeli G, Khajeh Goodari M, Valizadeh L. the challenges of nursing doctoral curriculum in Iran: a critical

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look based on Delphi technique. Nurs Midwifery J. 2017;15(6): 424-439
11. Jaberikini, Faqihi A, Nikoimani, Daryazadeh S. Challenges for implementing general dentistry curriculum from students' viewpoint: a qualitative study. Journal of Mashhad Dental School. 2019; 42(4):356-69.
12. Ansari Moghadam S, Shokouhinia R, Hosseini Tabatabai S, Risbaf Fakour S, Ansari Moghadam S, Naebi M. Evaluation Of The Achievement Of Educational Objectives In Restorative Dentistry And Periodontics Departments In Zahedan Faculty Of Dentistry During 2014-2015. Journal of Mashhad Dental School. 2017; 41(2):91-106.
13. Esmat N. Concepts and changed patterns in centralized and decentralized curriculum in medical education. Conference on Concentration and Decentralization in the Curriculum Planning Process. Conference on Concentration and Decentralization in the Curriculum Planning Process.2005.
14. Ebrahimi S, Shayek SS, Hakimaneh SMR. Comparison of achievement of educational objectives in prosthodontics department of Shahed Dental School according to approved 2001 and 2013 curricula. 2019; 27(5):9-16.

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