مقدمه: برای آموزش مهارت‌های کلینیکی و تخصصی دانشجویان، از سال 1345 تا 1352، در مرکز تحقیقات قلب و عروق دانشگاه علوم پزشکی مشهد، به‌طور پیوسته در دو مرحله، آزمون‌های مشخصی بر دانشجویان دانشگاه مشهد اجرا گردید که هدف آنها ارزیابی شایعات، موانع و امکانات این مهارت‌ها می‌باشد.

نتایج: ارزیابی و ارزیابی آزمون‌های مطرح شده در دو مرحله آزمون‌های مشخصی، با استفاده از کلیه موارد آزمون و در کلیه جلسات آزمون صادق و در کلیه تبعیض‌های ناقص که در هر جلسه آزمون صادق بازیابی شد، به‌طور گسترده‌ای در دو مرحله آزمون صادق انجام گردید.

بحث: در این مطالعه، نتایج آزمون‌های مشخصی در دو مرحله آزمون صادق ارائه شده که می‌تواند به‌عنوان یکی از ابزارهای کاربردی برای استحکام سازی نهایی مهارت‌های کلینیکی و تخصصی دانشجویان در دانشگاه مشهد استفاده شود.

در نهایت، این آزمون‌های مشخصی در دو مرحله آزمون صادق به‌عنوان یکی از ابزارهای کاربردی برای استحکام سازی نهایی مهارت‌های کلینیکی و تخصصی دانشجویان در دانشگاه مشهد استفاده شود.

کلید واژه‌ها: آزمون‌های مشخصی، مهارت‌های کلینیکی و تخصصی، دانشگاه مشهد.
INTRODUCTION

Aside from offering health services, the medical universities are also in charge of training qualified and skillful human resources to promote the well-being of the society (1-3). The evolutions which have taken place in the recent decades, have led to the wide diversity of required qualifications. In fact, changes in education are carried out to eliminate the need; therefore, the promotion of the pedagogic quality can greatly serve the maintenance of the well-being of the society.

The main components of a curriculum or educational program are: 1- the content 2- teaching and learning strategies 3- the students’ assessment process based on the curriculum, and 4- the evaluation process of the curriculum (4,5). In the field of medical education, the curricular evaluation can be carried out through assistants’ need analysis and identifying the problems. Need analysis, as one of the major factors in many fields dealing with programming to reach certain goals, has long been the center of attention. According to the definition, “need” has been interpreted as: 1- the demands and opinions of the people 2- a defect or problem 3- lack or necessity of something 4- distance or gap. Among the various definitions above, the most comprehensive one is its definition as a kind of distance or gap. Generally speaking, the most essential objective of need analysis is providing information for programming (5).

As medical education is altering like the field of medicine itself, it is vital that this curriculum be revised due to the needs of society and those of assistants, as well as, the advances in the field.

METHODS

This cross-sectional study was conducted based on the “need analysis approach” of the present curriculum and “the investigation of all assistants’ needs” to change the existing one. In designing the questionnaire, the questions inspired by the curricula of credible universities were also included, because in the present curriculum, the details were not much attended to and most of the assistants were not informed of this issue at all. The whole research population consisted of second to fourth-grade assistant students of Mashhad Medical University. In order to carry out the research, a questionnaire was designed by a group of university professors of the cardiology department along with the experts working at the center of educational research and development; in addition, the preparation, validity and reliability of the questionnaire were validated by seeking advice from the medical education department of the university. The questionnaires were handed one by one to the assistants. On every occasion, the researcher won all of the assistants’ contribution to accurately filling out the questionnaire, and to coming up with practical and helpful suggestions, by explaining that the results would be kept confidential.

After the completion of questionnaires by the assistants, the qualitative data and the suggestions were examined and quantitatively classified. Next, the data were analyzed using SPSS software.

RESULTS

In this study, 55% of the participants were men and 45% were women. Surprisingly, only 5 assistants (5%) had read the curriculum. Awareness of the present curriculum as well as the assistants’ versatility is illustrated in table 1.

The assistants’ recommended solutions to promote the educational status are offered in Table 2.

The assistants demanded improving their article-writing skill and provided solutions in this regard.

Most of them concurred with the educational program at the beginning of the assistant course; besides, their suggestions regarding the required teaching subjects are represented in chart 1. The research population pointed out September (Shahrivar) as the best time for holding the classes at the beginning of assistant course (73%).

The assistants agreed on rotating in the center of cardiology research, and expected the center to teach article-writing skills as well as how to correctly interpret them.

Most of the assistants agreed about the rotation in the internal medicine ward offered in the present curriculum; however, 27% were not pleased with the way it was put into practice. The suggested wards for rotation are illustrated in chart 2.

And eventually, regarding their satisfaction of the accuracy of assistants’ in-ward assessment was: 38% slightly satisfied, and 62% dissatisfied; in addition, they also put forward some suggestions.

<table>
<thead>
<tr>
<th>Questins/percentage</th>
<th>lack (%)</th>
<th>relative (%)</th>
<th>full (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of the curriculum</td>
<td>18</td>
<td>44</td>
<td>38</td>
</tr>
<tr>
<td>Awareness of article-writing skill</td>
<td>95</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Familiarity with the correct method of presenting an article in the journal club</td>
<td>44</td>
<td>44</td>
<td>12</td>
</tr>
<tr>
<td>Awareness of legal issues</td>
<td>45</td>
<td>55</td>
<td>0</td>
</tr>
<tr>
<td>assistants’ familiarity with Evidence Based Medicine</td>
<td>66</td>
<td>22</td>
<td>12</td>
</tr>
</tbody>
</table>
Due to the existing situation, it is recommended that education is organized so that fewer practical gaps are observed among the universities. One of the carefully-designed curricula is that of European Cardiology which entails a six-year course of general illnesses, and a minimum of four-year cardiology course according to which the educational program has been based on three goals, namely changing the information or knowledge, developing the skill, and changing attitude. Moreover, the plans have already been defined accurately. There is also, a pre-codified plan for assessment (6). The present curriculum is practiced differently, for instance with regard to the rotation among the internal medicine wards while assistants call for a specific schedule as well as rotation in particular wards. As the cardiology assistant is bound to spend a year in the internal medicine ward, the details of the rotation schedule have to be determined from the very beginning so as not to be changed by the faculty without prior notice. Besides, rotation in the internal emergency ward, Nephrology, and even in various hospitals related to the same university. Due to the existing situation, it is recommended that education is organized so that fewer practical gaps are observed among the universities. One of the carefully-designed curricula is that of European Cardiology which entails a six-year course of general illnesses, and a minimum of four-year cardiology course according to which the educational program has been based on three goals, namely changing the information or knowledge, developing the skill, and changing attitude. Moreover, the plans have already been defined accurately. There is also, a pre-codified plan for assessment (6). The present curriculum is practiced differently, for instance with regard to the rotation among the internal medicine wards while assistants call for a specific schedule as well as rotation in particular wards. As the cardiology assistant is bound to spend a year in the internal medicine ward, the details of the rotation schedule have to be determined from the very beginning so as not to be changed by the faculty without prior notice. Besides, rotation in the internal emergency ward, Nephrology, and even in various hospitals related to the same university.

**Table 2. The assistants’ recommended solutions to promote the educational status of cardiology (skills)**

<table>
<thead>
<tr>
<th>Questions/ percentage</th>
<th>Fully disagree (%)</th>
<th>Slightly agree (%)</th>
<th>Fully agree (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The presentation of an article in the journal club in English</td>
<td>27</td>
<td>55</td>
<td>18</td>
</tr>
<tr>
<td>Giving the morning report in English</td>
<td>34</td>
<td>44</td>
<td>22</td>
</tr>
<tr>
<td>Teaching computer-related skills</td>
<td>0</td>
<td>28</td>
<td>72</td>
</tr>
<tr>
<td>Holding Evidence Based Medicine Workshops</td>
<td>12</td>
<td>33</td>
<td>55</td>
</tr>
<tr>
<td>Holding educational classes at the beginning of Assistant course</td>
<td>5</td>
<td>22</td>
<td>73</td>
</tr>
<tr>
<td>Rotation in the cardiology research center</td>
<td>0</td>
<td>62</td>
<td>38</td>
</tr>
<tr>
<td>Rotation in the internal medicine ward</td>
<td>5</td>
<td>0</td>
<td>95</td>
</tr>
</tbody>
</table>

**Chart 1. The required subjects at the beginning of the assistant course**

- ECG, 72
- The essential preliminary treatments, 66
- CPR, 61
- teaching counseling, 27
- familiarity with the medication, 33

**Chart 2. The suggested wards for rotation**

- Hematology, 5
- Rheumatology, 16
- Gastroenterology, 33
- Endocrinology and Nephrology, 83
- Pulmonary, 94
- Internal emergency ward, 88

**DISCUSSION**

The courses of various fields have exclusive curricula. The last revision of the cardiology curriculum was made by the Commission of Codification and Education Planning in 2009 (1388). This is a four-year major of which the first year deals with rotating in the internal medicine ward and the second to fourth with the exclusive cardiology illnesses. According to the codified curriculum in the Ministry of Health, during the last three years, the assistants are to be trained for a four-month period in pediatric cardiology, nuclear medicine, and cardiac surgery, in addition to rotating in the internal medicine wards. Besides, at the end of each year, the promotion exam of the same year and practical exams are held. According to the present study, most of the assistants were not aware of the details of the curriculum and demanded modifications in the existing one. The present curriculum, on the other hand, has only mentioned the assistants’ duties in general, but not the detailed procedures. That’s why this curriculum is carried out differently in various universities, and even in various hospitals related to the same university.
Gastroenterology, Endocrinology, and Pulmonology wards can also work to their advantage. Based on the present study, assistants demanded developing their skills prior to the beginning of the assistant course; moreover, due to the shifts and advances of sciences, there exists the need for courses like English, article writing, computer skills, etc. It is worth mentioning that in many creditable universities, such skills are the prerequisites of granting entry to courses (7,8).

On account of the conducted survey, existing demands, and the study of the curricula of various countries, it is suggested that, considering the current situation, part of education is carried out virtually (9). Furthermore, with the daily advances in sciences, relying on the reference books which have been behind time for several years, is not appropriate, and there is an urgent need for teaching novel methods, including teaching through observation (10).

Considering that every assistant is bound to present a thesis at the end of the course, and regarding their unfamiliarity with the correct writing approaches of research plans, theses, and articles, plus in order to improve the scientific rank and increase the number of the published articles of Iran throughout the world credited journals, it is recommended that teaching such skills as article writing is valued more than before.

It can be concluded that, according to this study, changing the existing curriculum and developing an accurate, level plan with specific goals which is carried out uniformly in various universities, based on the novel needs of assistants, is highly demanded.

**The strong points and limitations of the study:**

Studying the assistants’ curriculum and their needs has been unprecedented in Iran, and this is the first study regarding this issue. However, it has some limitations, too. For instance, it was conducted in one university and only in one field; it is suggested that this research will be carried out at a more expanded level.

### REFERENCES


3. Educational Planning Unit. Kerman University Of Medical Sciences. (Persian).


