Syllabus Revision Based on Kern Model in the Anatomical Topics for Students of Pre-Hospital Emergency Care in Gonabad University of Medical Sciences, 2014


Department of Basic Science, School of Medicine, Gonabad University of Medical Sciences, Gonabad, Iran; Microanatomy Research Center, School of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran
Department of Nursing, Faculty of Nursing, Gonabad University of Medical Sciences, Gonabad, Iran
Department of Anatomy, School of Medicine, Birjand University of Medical Sciences, Birjand, Iran
Department of Anatomy, School of Medicine, Urmia University of Medical Sciences, Urmia, Iran
Department of Anatomy, School of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran
Department of Anatomy, School of Medicine, Lorestan University of Medical Sciences, Lorestan, Iran
Department of Anatomy, School of Medicine, Golestan University of Medical Sciences, Golestan, Iran
Department of Anatomy, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran
Department of Anatomy, School of Medicine, Ahvaz University of Medical Sciences, Ahvaz, Iran
Department of Anatomy, School of Medicine, Kashan University of Medical Sciences, Kashan, Iran
Department of Anatomy, School of Medicine, Tabriz University of Medical Sciences, Tabriz, Iran
Department of Anatomy, School of Medicine, Rafsanjan University of Medical Sciences, Rafsanjan, Iran
Department of Anatomy, School of Medicine, Qazvin University of Medical Sciences, Qazvin, Iran
Department of Nursing, School of Nursing, Mashhad University of Medical Sciences, Mashhad, Iran; Neurogenic Inflammation Research Center, School of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran
Department of Anatomy, School of Medicine, Kermanshah University of Medical Sciences, Kermanshah, Iran

Corresponding Author: Maryam Mohammadi, Department of Public Health, School of Health, Shahid Beheshti University of Medical Sciences, Tehran, Iran.
Abstract: By considering, syllabus of anatomy course in pre hospital emergency has overlap in both bachelor and master degrees and it causes confusing for students as well as teachers, hence we revised syllabus of anatomy course in field of pre hospital emergency using Kern model. After holding several meetings with faculty members and of anatomy and medical emergency and evaluation of syllabus in Foreign University, the revised questionnaire was prepared and sent to members. Forms were collected post comments. Finally, assessment and feedback program was proposed. Data were analyzed using SPSS software. A total of 80 (59 anatomist and 21 in the field of medical emergency) participated in our study. 79.3% of cases were agree with revision of the anatomy course. The proposed topics include clinical anatomy, organ changes after trauma, anatomy of special patients. The removed topics include the genitourinary system, the immune system and histology. It proposed a combination of student-centered learning strategies and teacher-centered and new methods. The proposed assessment was formative assessment during the semester with the final exam. According to our study, proposed syllabus in performance level had greater consistent with clinical duties in graduated students of medical emergency.

Key words: Syllabus • Anatomy • Pre Hospital Emergency Care

INTRIDUCTION

Pre hospital emergency care is a field at the forefront of medicine dealing with injuries and maybe after the medicine, is second field that allow them to intervene in treatment. Sometimes, the work of this people is more sensitive there in to deal with the victims of accidents. In most cases, in this accident happened anatomical problems and if they do not know the anatomy very well may cause unwanted damage to victims. On the other hand, if they know anatomy, can help to improve and the prevention of damage [1].

Anatomy is a difficult lesson for students because of two reasons: in the first semester that student comes from indicators. Revision is based on the three famous model high school to college, has not strong individual Tylor, Karen and Aaron models. In the 4-step management. Because educational system manages student in high school and but self-management need in university that still don’t reached this level of capability. Second, Anatomy is a difficult lesson naturally and has not so much Persian word and most word is Arabic or English, so the resources is limited and the effectiveness of the training is very important [1].

Determination of education needs is first step of educational program and it actually is first factor to create and guarantee of education performance effectiveness. Therefore practical topic is necessary [2-6]. Educational program must makes the scientific and professional skills in accordance with the needs of society in various medical graduates. To codify educational programs must identify learner needs and then chose the appropriate procedures for the more training and skills [7-12].

Abbat divided training to students into three category: what must be learning, what is useful to learning and what is interesting to learning? He emphasizes to train reality and skills that students need for job specification and educators focus on this reality and skill importance [13].

Syllabus revision is done in order to update the character of the program, purpose, method and values indicators. Revision is based on the three famous model as follows: Tylor, Karen and Aaron models. In the 4-step model Tylor, it seems that content is discussed generally and has been paid to detail less. Aaron is 10-step model and its usage is for a course study. Cornwall Model regardless of process number is appropriate, is used for Curriculum development in the field of medical science in Iran. As regards anatomy syllabus has overlaps completely at in undergraduate and graduate and this causes confusion for students and teachers in the field of concepts, so for we use Kern model to revise on anatomy syllabus for pre hospital emergency care [14, 15].
MATERIALS AND METHODS

This study was performed on the bachelor students after the approval of the ethics committee in 2014. We use Kern model to revise which has six stages (difficulties and general assessment – educational assessment - learning objectives - Strategy the program - implementation plan - evaluating and providing feedback). First the numerous meetings was held with managers and graduates of medical emergency care, anatomy and medical education and the problems was evaluated. Then the anatomy syllabus at world great universities was compared with the Bachelor's program in medical ministry of Iran. In addition, a standard questionnaire was developed and confirmed its validity and reliability by Methodologist, forms send to universities and emergency posts and comments were collected.

Questionnaire contains 5 answer: very low, low, average, high and very high. The questionnaire consisted of open questions that allows the audience to apply ideas that are not included. Then, according to the comments, we revised syllabus and after the implementation of the pilot syllabus, evaluation and feedback was carried out.

Statistical Analysis: SPSS 20 was used for data analysis. P value was considered less than 0.05. Descriptive statistic parameter were used such as percentage, frequency, etc.

RESULTS

Eighty students participated in the study. A total of 59 of them were anatomy teachers and 21 persons were the medical emergency care teachers or emergency center workers (Table 1).

Anatomy Teachers Comments on the Syllabus Revise: A total of 72.9% students were agreed the anatomy syllabus revision on medical emergency care.

Most syllabus that were proposed by anatomy teachers respectively were practical and clinical anatomy, surface anatomy, cross-sectional anatomy, mechanism of trauma and its effects on organs anatomy, parturition steps and anatomy of people with congenital disabilities.

Most removed syllabus that were proposed by anatomy teachers were the immune system, genitourinary system, special senses and histology, respectively. Most emphasized syllabus that were proposed by anatomy teachers respectively were skeletal and anatomical changes after trauma, cardiac anatomy, respiratory system, neurology and anatomy of the spine and vertebral column.

28.8% believed that the number of theoretical courses are inappropriate and 32.3% believed that the number of practical courses are inappropriate for medical emergency care.

Most anatomists believed that perfect place for the theoretical and practical teaching is model hall. 91.5% of anatomists believed slide show for anatomy theory teaching. The proposed educational strategies in 72.5% of people were a combination of student centered - master centered approach.

79.7% of people chose formative evaluation during the semester and 18.6% preferred the final exam without evaluation during the semester. 57.6% chose OSCI test, 52.5% OSATS test and 61% new methods of evaluation.

Medical Emergency Care Teachers Comments on the Syllabus Revise: 85.7% of medical emergency care teachers were agreed the anatomy syllabus revision on medical emergency care.

Most syllabus that were proposed by medical emergency care teachers were practical and clinical anatomy, surface anatomy, mechanism of trauma and its effects on organs anatomy.

Most removed syllabus that were proposed by medical emergency care teachers respectively were the immune system, histology and genitourinary system. Most emphasized syllabus that were proposed by medical emergency care teachers respectively were cardiac anatomy, respiratory system, skeletal and anatomical changes after trauma, anatomy of the spine and vertebral column and neurology.

<table>
<thead>
<tr>
<th>Participants</th>
<th>Number</th>
<th>Age</th>
<th>Gender</th>
<th>experience</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomy teachers</td>
<td>59</td>
<td>42.32</td>
<td>18 Female / 43 male</td>
<td>10.44</td>
<td>11 master / 48 PhD</td>
</tr>
<tr>
<td>medical emergency care teachers</td>
<td>11</td>
<td>41.63</td>
<td>3 women / 8 male</td>
<td>14.09</td>
<td>5 master / 6 Ph.D.</td>
</tr>
<tr>
<td>emergency center and crisis management staff</td>
<td>10</td>
<td>32.9</td>
<td>0 female / 10male</td>
<td>6.1</td>
<td>1 Master / 9 bachelor</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>41.05</td>
<td>21 women / 59 male</td>
<td>10.4</td>
<td></td>
</tr>
</tbody>
</table>
14.3% of people believed that the number of theoretical courses are inappropriate and 42.9% believed that the number of practical courses are inappropriate for anatomy course of medical emergency care and proposed that practical course will perform by cadaver on dissection hall.

81% of people believed that perfect place for the theoretical training is model hall and 85.7% believed that perfect place for practical teaching is dissection hall. 85.7% of people believed to using a movie show for teaching anatomy. The proposed educational strategies in 90.5% of people were combination of a student-centered - teacher centered approach.

100% of people chose formative evaluation during the semester and 14.3% preferred the final exam without evaluation during the semester. 81% chose OSCI test, 81% OSATS test and 85.7% new methods of evaluation.

**DISCUSSION**

Most of the proposed topics include clinical anatomy, anatomy and organ’s changes after trauma and anatomy of specific patients (infants, children, fat people, pregnant women and elderly people). Most of eliminations were the urogenital system, the immune system and histology. Suggested instructional strategies were based on fusion method “student centered- teacher centered and new training method”. The proposed evaluation method is also formative assessment during the semester with a final exam. In a study that conducted by Teimoury and colleagues, curriculum of health education and communication was revised. This qualitative study were conducted using the Delphi technique and participation of 38 members of the faculty and director of health education and communication. According to the opinions of the specialized committees composed of 7 teachers of health education and communication, rewritten and reviewed topics with recommendations on how to evaluate the cases, the initial framework was prepared and were sent to the teachers and heads of the departments of health education and community of six Medical Universities for obtaining the comment in ideas. The sample size in our study was 80 which was higher than this study. Moreover, in addition, in our study surveys of professors and also the views of students and graduates were also used. In our study majority of ideas were agree with increasing the anatomy course. In another study at the University of Babol, the members of Biochemistry’s department of the universities were asked about revision in biochemistry’s topics of medicine and dentistry. The different aspects of the syllabus were discussed by members of faculty of the universities of Tehran, Babol, Mazandaran, Golestan, Gilan, Yazd, Mashhad, Tabriz and Bandar Abbas. The results of the University’s biochemistry professors were gained through discussion, questions and answers and preparing the surveys. According to the results of the survey, teachers showed a high satisfaction because of studying the topic and they were agree to do it and they had a good corrective feedback. They remembered that sources should be added or some of the issues should be removed. Professor’s attitude toward the study of the syllabus was very good and they stated that the teaching hours and some topics should be added. According to the results of a questionnaire and discussions with teachers, they said prerequisite is essential for biochemistry and discussion with collecting the questionnaires, the increased interest of professors on how to examine the topic and satisfaction of that became clear [16]. In favor of the study 79.3% of professors and graduated also were in favor of revision.

Sheykhol eslamie and colleagues at the Qom University of Medical Sciences performed the survey about theoretical topics from 25 faculty members of infectious diseases of Qom, Tehran, Bushehr and Kerman University of Medical Sciences. The majority of faculty members believed to increase the time of discussions relate to negative gram bacteria, septic shock, negative and positive gram cocci and protozoal infections. Most of them believed that issues such as immunopathology of cell and tricomonas and leprosy and smallpox and Rocky Mountain should be removed. AIDS should be discussed. For urinary tract infection, cellulitis, pneumonia, endocarditis, hepatitis, encephalitis and meningitis as an
important clinical syndrome a few hours should be considered [17]. The sample size in our study was 80 which was higher than this study. Moreover, in addition to surveys of professors, also the views of graduates of the faculty were used. In our study, the highest suggested topics include clinical anatomy, organ’s changes after trauma, anatomy of specific patients and the most eliminations related to the immune system, histology and the urogenital.

CONCLUSION

According to our study on the performance level, our proposed topic is more compatible with the clinical tasks of graduates of medical emergency. Favorable reception of experienced and veteran Professors of anatomy and medical emergency about the content of the discussions on the proposed topic of anatomy and positive attitude of students and graduates of medical emergency to the proposed topic of anatomy are the strengths of this study.

ACKNOWLEDGEMENTS

This study is was extracted from a research project with the code EDC / 1393/4 which approved by the Education and Development Center of Gonabad University of Medical Sciences, which authors wish to thanks from their helps.

REFERENCES

7. Yazdani, S.h. and S. Hatami 2004. [General practitioner in Iran Tasks and educational needs: Methods and result application]. Tehran: Shaheed Behesht University of Medical Sciences; [Persian]
