Nurtural Assessment of General Practitioner's Curriculum Based on Clinical Activities, Advocacy, Research, and Education (CARE) Model

Background: Social responsiveness of a curriculum is directing all medical education activities in order to train expert physicians to meet the health needs of a target community. Since medical education has moved towards a community-centered and community-based approach, a significant attention has to be paid to the concept of social responsiveness in medical education. Therefore, the biggest challenge of the future medical faculties is creating an acceptable relationship between health effect and community, as it is the main objective of the social responsiveness. The purpose of this study is to assess the educational needs of general practitioners for social responsiveness from the viewpoint of medical and educational evaluations.

Methods: The present study was a descriptive one in the terms of the applied purposes and data gathering method. Also it focused on correlation through structural equation model. The assessment tool used in this study was the questionnaire composed of 140 medical graduates who passed at least one year of their graduation, as well as educational experts (education expert of the department, vice chancellors of one year of their graduation, as well as educational experts and Psychology, Education and Psychology, Payame Noor University, Mashhad, Iran)

Results: The findings showed that there is a significant relationship between health effect and community. The assessment of courses showed that the social responsiveness of a curriculum is directing all educational programs. Therefore, the biggest challenge of the future medical faculties is creating an acceptable relationship between health effect and community. The key findings are as follows:

1. The social responsiveness of a curriculum is directing all educational programs.
2. The social responsiveness of a curriculum is directing all educational programs.
3. The social responsiveness of a curriculum is directing all educational programs.
4. The social responsiveness of a curriculum is directing all educational programs.

Conclusion: The results of the study indicate the importance of social responsiveness of a curriculum as a guide for implementing responsiveness plan. The key findings are as follows:

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Keywords: Curriculum, General practitioners, Social responsiveness

INTRODUCTION

According to the 20-year outlook of the country, one of the five main perspectives of the year 2025 is achieving the first position of science and technology in the region. In this twenty-year vision, the characteristics of healthy Iranian society are described as follows: “Having health, well-being, food security, social security, equal opportunities, proper distribution of income, firm institution of the family, away from poverty, corruption, and benefiting from the favorable environment”. The perspective of the health section within the fourth plan is to:

1. Provide, maintain, and promote the health of people in the community;
2. To meet the non-medical needs of people; and
3. To participate equally in supplying financial resources.

Studying and recognizing educational needs is a prerequisite for a successful education system. The missing link of need assessment in Iran’s health and medical education planning system, as compared to developed countries, threatens the results of educational programs seriously (2). Usually, there is a mismatch between the expectations of a medical graduate as well as the abilities and capabilities acquired in his training program; so it is reasonable to apply proper need assessment to provide an effective curriculum (3). In other words, the first step in designing each program is identifying the needs. Without a proper need assessment, it is not possible to adjust the objectives of the curriculum properly, allocate the necessary resources, and provide the appropriate views and methods to address those needs (4). For social responsiveness of the curriculum, community needs must be identified first, and then the current and future changes of the society should be identified and predicted. So, it will be necessary to determine the required competencies of physicians and to develop curriculum and educational goals for physicians. Finally, the evaluation of the effectiveness of the designed curriculum is essential for achieving the objectives of the social responsiveness (5).

Social responsiveness which is considered as a social issue and affects human health dates back to the time of Hippocrates (6). This long history is not surprising at all, because social responsiveness affecting human health is at the core of medical care and has been emphasized in all schools, including the Iranian-Islamic school. (7). From the time of their establishment, medical schools around the world have always been trying to train physicians to meet the needs of people and to reduce their sufferings. Graduates from these schools have always endeavored to solve the problems of the human community and have had a brilliant effect on people’s health. Unfortunately with disappearance of the epidemiology of diseases and the presence of poor and rich social classes inside a country, as well as between different countries, and the increased professionalization and the high prices of medical services around the world, these programs should adapt these changes (8). Because of these specific revisions in advanced as well as developing societies, a new concept has been put forward here as the Responsive Medical Schools for the community (9-10). Numerous studies on recently graduated physicians in the United Kingdom showed that there has been lack of skills among physicians. The deficiency signs in the social responsiveness of the curriculum can be the lack of knowledge, lack of appropriateness of attitudes and skills of physicians to the needs of society; however, it has been observed that the lack of attention to social responsiveness in the training of physicians has led to the inability of physicians in providing services to the community, which in turn reduces their self-esteem and increases their anxiety in the early years of practice (5). On the other hand, modern developments of medical education are inevitably progressing forward and encourage medical schools to re-evaluate their curricula to ensure the quality of graduates and qualify them with the defined standards. Social responsiveness which is an important fact of a credible global curriculum and global credibility now becomes an important goal for many medical schools (11). In Iran, for some time, the agenda of reforming medical education programs has been proposed and investigated; however, the actions taken are more suitable for conducting cross-sectional examinations such as pre-internship and admissions of residents (12) than following just practical purposes. However, numerous studies confirm that today’s classroom knowledge cannot enhance the social responsibility of practitioners (13-17).

In fact, responsive medical education must move from its lowest level (responsibility) to the highest level (responsiveness). This means that faculties lead educational, research and service activities to address health needs based on the community’s priority. They design their curriculum and their clinical teaching practices so that students may face the health challenges in an early and continuous way, so they will be able to cope with health problems. This level of responsiveness overlaps with the concept of professionalism, in which a physician is committed to the community, the medical profession, and the patients (18). While the concept of social responsiveness is widely used, the term “social responsiveness” is used for social justice and is considered as an inevitable and indisputable event, while at the same time it increasingly remains obscure in meaning and concept, so the criteria for reflection are necessary to clarify the multiple meaning of social accountability (19).

In this research, using Clinical Activities, Advocacy, Research, and Education (CARE model), consisting of four major areas, educational activities for social responsiveness in the general medical education curriculum which plays and important role in creating a social responsiveness culture in faculties, are defined.

Clinical: Includes identifying signs of initial problems and responding to changes in community needs, and overcoming access barriers.

Advocacy: Includes speaking on behalf of covered people while considering ignored situations, and working with partners and policymakers to enhance the vision of a patient-based care system.

Research: Refers to curiosity-driven and responds to real
needs, leading to evidence-based performance and qualified cares.

**Education:** Educational and teaching models provide community-based responses. These are opportunities for learning services and integrating social responsiveness in practical training and continuous learning throughout the active life of a physician (20).

In the studies conducted by other researchers, no research has focused solely on the educational needs assessment in the field of social responsiveness based on the CARE model in Iran. Therefore, performing research in this field is necessary.

**METHODS**

In terms of applied purpose and data gathering method, this is a descriptive study of correlation type with an emphasis on structural equation model. The population of this study included all medical graduates who had at least one year of their graduation passed, as well as educational experts (educational expert of the department, vice chancellors of education of the departments, and EDC Experts) of Education Development Center of Mashhad University of Medical Sciences (N=140). Non-random purposive sampling method was used. According to Cochran formula, 105 people were selected as the sample size. The experts were from Mashhad University of Medical Sciences (24 people), faculty members of medicine (25 people), and physicians working in the healthcare system (51 people) all of them worked in health centers. The data gathering tool was a researcher-made questionnaire. In the first step, in order to identify the four components of the CARE model and its constituting factors, after the complete study of theoretical foundations and the history of related research, interviewing method was used. Faculty members and researchers who worked on the research topic were identified and, to the possible extent, their views were gained through a semi-structured interview. At this stage, the interviewees were asked to submit a questionnaire on the proportionality of the indicators and factors extracted from the literature. After the proposed modifications, the questionnaire was compiled by the interviewing group based on four components of clinical activities, advocacy, research, and education, and 38 indices. The confidence coefficient was calculated using Cronbach's alpha method to determine reliability of the questionnaire and a coefficient of 0.85 was obtained. This indicates that the final questionnaire is reliable. To confirm the factor structure of the measure scale (Validity Determination), a confirmatory factor analysis method was used based on the Amos software. For this purpose, a confirmatory factor analysis was performed for each of the components in the research tool. Each of the components and statistical attributes associated with them are shown in Table 1. Although there are several statistics on the Amos output, RMSEA and CFI statistics are often criticized, because they are less affected by sample size. The root mean square error of approximation (RMSEA) varies between zero and one and the closer it approaches zero, the better fitting of the model. As can be seen in Table (1), this statistic is acceptable for components of the research model. Another one is the root mean square residual (RMR). When RMR is about 0.05, it indicates that it fits the model. The value of this statistic on the components of the research model shows that fitting the model is acceptable. Another statistic is the Goodness of Fit Index (GFI), which varies between zero and one, and the closer to zero indicating a better fit of the model. In this regard, the components of the model also represent the optimal fit of the model. Finally, the comparative fit index (CFI) varies between zero and one, and the larger the amount, the better fit the model. In the studied structures, the value of this statistic indicates the optimal fit of the model under study. According to the results of the confirmatory factor analysis, the questionnaire had a high validity. After validation, the questionnaire was distributed by the researcher in different days. In order to attract the participation of people, they were provided with explanations regarding the purpose of completing the questionnaire and mentioning the ethics in the questionnaire, including the confidentiality of the information and the fact that the questionnaires would be anonymous.

**RESULTS**

The distribution of the statistical population based on gender and age shows that among male participants, 36% are experts, 22% are faculty members, and 16% are general practitioners. Among female participants, 13% are faculty members, and 13% are physicians. The age data also indicates that the average age is 50.5 years for experts, 44.4 years old for faculty members and 44.1 years for general practitioners.

The results of the hypothesis test are presented in the following table according to the t-statistic and path coefficient and the significant level.

Based on the results of table 2, the relationship between educational needs in the field of clinical activities for social

<table>
<thead>
<tr>
<th>Component</th>
<th>RMR</th>
<th>GFI</th>
<th>CFI</th>
<th>RMSEA</th>
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</thead>
<tbody>
<tr>
<td>Clinical Activities</td>
<td>0.07</td>
<td>0.90</td>
<td>0.86</td>
<td>0.6</td>
</tr>
<tr>
<td>Advocacy Programs</td>
<td>0.06</td>
<td>0.93</td>
<td>0.91</td>
<td>0.6</td>
</tr>
<tr>
<td>Research</td>
<td>0.05</td>
<td>0.91</td>
<td>0.90</td>
<td>0.7</td>
</tr>
<tr>
<td>Education</td>
<td>0.02</td>
<td>0.94</td>
<td>0.98</td>
<td>0.04</td>
</tr>
</tbody>
</table>
responsiveness in the general medical education curriculum of the medical school is significant and the path coefficient is 0.75. There is a significant relationship between educational needs in the area of research for social responsiveness in the general medical curriculum of the medical school with a significance level of 0.01 and the path coefficient is 0.44. There is a significant relationship between educational needs in the field of educational activities for social responsiveness in the general medical curriculum of the medical school, with a significance level of zero (less than 5%) and its path coefficient is 0.93. However, there was not a significant relationship between the educational needs in the area of advocacy programs in the general medical school curriculum so the educational need in the area of advocacy of the model was eliminated.

After analyzing the measurement model, the structural model was studied. In path analysis, relations between variables flow in one direction and are considered as distinct paths. The concept of path analysis is best illustrated by its major feature, the path diagram that reveals potential causal links between variables. Figures 1 and 2 illustrate structural equation modeling and path diagram patterns of the research model.

<table>
<thead>
<tr>
<th>Significance Level</th>
<th>t Values</th>
<th>Path Coefficient</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>3.87</td>
<td>0.93</td>
<td>Social Responsiveness → Education</td>
</tr>
<tr>
<td>0.02</td>
<td>5.21</td>
<td>0.75</td>
<td>Social Responsiveness → Clinical</td>
</tr>
<tr>
<td>0.03</td>
<td>3.76</td>
<td>0.44</td>
<td>Social Responsiveness → Research</td>
</tr>
<tr>
<td>0.59</td>
<td>1.01</td>
<td>0.12</td>
<td>Social Responsiveness → Advocacy</td>
</tr>
</tbody>
</table>

Figure 1. Conceptual fitted model in standard estimation mode
In Table 3, the values of each fit indices related to independent and dependent variables are mentioned. The indices are positive and larger than zero.

In Table 4, the relationship between the research components and their tests is mentioned. To confirm or reject them, the Student’s t-Test statistic was used.

**DISCUSSION**

This study aimed to determine the needs of the general medicine curriculum for social responsiveness based on the CARE model in Mashhad Medical School in order to improve the curriculum.

The relationship between educational needs in the field of clinical activities for social responsiveness in the general medicine curriculum of the medical school was significant with regard to the significance level of zero (less than 5%). The relationship between clinical or practical skills with social responsiveness shows that the more students actively engage in practical skills, the more effective they will be as professional physicians after their graduation. But we must know that clinical skill is a necessary condition, not a sufficient one.

There was a significant relationship between educational needs in the area of social responsiveness research in the general medicine curriculum of the medical school with a significance level of 0.01 (which is less than 5%). This shows that higher education in the Ministry of Health tries to train a practitioner with a specialist view of medical science before graduation. The culture of exploration has a special place in the health system. The need for physician exploration morale is necessary. Due to the rapid growth of technology and the emergence of new diseases in the developing world, as well as, the creation of resistance in the supply of bacteria and...
germs based on the well-known principle of Darwinism (the more compatible remains), medicine can respond to its own community if the spirit of discovery has already been learned. The promotion of the spirit of exploration and the resolution of new challenges and crises should be taught to a physician before graduation.

There was a significant relationship between educational needs in the field of educational activities for social responsiveness in the general medicine curriculum of the medical school, with a significant level of zero (less than 5%). The University of Medical Sciences has a duty to inspire this important principle in the field of education for its graduates, since graduating as a physician should not make physicians away from educational environments. They have to consider themselves to be in need of modern science in medicine, as every moment a new disease is discovered and new treatments are presented. For example, physicians who have been employed in specific centers for a long time, do not feel any duty to improve the new therapeutic ways so that they can cure their patients based on the newest medicinal ways. Due to the stability of their working condition and job stability, as well as lack of legal considerations, they gradually become fossilized in their educated community. Since there is no supervising institution to control the work of these experienced physicians they do not practice based on state-of-the-art science. A physician should know that, when practicing medicine, he needs to apply the modern medical science in order to be able to respond to the community.

There was no significant correlation between educational needs in the area of social support programs in the general medicine curriculum of the medical school, so the educational needs in the area of advocacy were eliminated from the model. This question was not confirmed, and can be attributed to the unwillingness of physicians to participate in groups and social challenges, to serve in deprived areas, or to participate in NGO groups, which shows that physicians are not committed to the Hippocratic Oath. After graduation, most physicians are willing to serve in good weather conditions and in prosperous city regions; however, if a group of physicians decide to work in underserved areas or environments, it will be presented as a news title in newspapers. This spiritual willingness must exist in all physicians in order to solve the health problems of the community. It is thought that if the Hippocratic Oath is adhered to, this problem will dim. The solution to this problem is a stronger, more practical and targeted training in the field of medical ethics at medical universities. We hope that the Hippocratic Oath won’t be just a symbol, and more volunteer groups emerge to respond to our society more efficiently. Policymakers and educational planners must understand that the health of each member of the society is closely related to the health of the whole society.

**Ethical considerations**

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

**ACKNOWLEDGEMENT**

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**Conflict of Interest**: The authors declare that they have no competing interests.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Direct Rout</th>
<th>Regression Coefficient</th>
<th>t</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Education → Research</td>
<td>0.93</td>
<td>3.87</td>
<td>Rejected</td>
</tr>
<tr>
<td>2</td>
<td>Advocacy → Research</td>
<td>0.20</td>
<td>1.28</td>
<td>Rejected</td>
</tr>
<tr>
<td>3</td>
<td>Clinical → Research</td>
<td>0.52</td>
<td>5.36</td>
<td>Confirmed</td>
</tr>
<tr>
<td>4</td>
<td>Educational → Clinical</td>
<td>0.44</td>
<td>4.78</td>
<td>Confirmed</td>
</tr>
<tr>
<td>5</td>
<td>Advocacy → Educational</td>
<td>0.49</td>
<td>5.68</td>
<td>Confirmed</td>
</tr>
<tr>
<td>6</td>
<td>Advocacy → Clinical</td>
<td>0.24</td>
<td>2.57</td>
<td>Confirmed</td>
</tr>
</tbody>
</table>

**REFERENCES**

6. Woollard RF. Caring for a common future: medical schools’ social