

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

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**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 graduates and educational experts.

**Methods:** The present study was a descriptive one in term 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 a questionnaire. The statistical population consisted of 140 medical graduates who passed at least one year of their graduation, 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. The sample size was estimated as 103 people by Cochran formula. **Results:** The findings showed that there is a significant relationship among all areas (clinical, educational, and research) with social responsiveness except advocacy area.

**Conclusion:** The results of the study indicate the importance of addressing social responsiveness in general practitioners' curriculum as a guide for implementing responsiveness plan.

**Keywords:** Curriculum; General practitioners; Social responsiveness

### تقييم احتياجات برنامج تدريب الأطباء العموميين على أساس النموذج CARE

**الخلفية والأهداف:** يهدف منهج المسؤولية الاجتماعية إلى توجيه جميع أنشطة التعليم الطبي لتدريب الأطباء القادرين على تلبية الاحتياجات الصحية للمجتمع المستهدف. عندما انتقل التعليم الطبي نحو المجتمع والمجتمعية، فإن مفهوم المسؤولية الاجتماعية للتعليم الطبي قد حظي بالكثير من الاهتمام. ولذلك، فإن التحدي الأكبر الذي يواجه كليات الطب المستقبلية في المستقبل هو محاولتها لإظهار تأثير أكبر على الصحة من خلال العلاقة مع المجتمع، وهو نفس الهدف من المسؤولية الاجتماعية. الغرض من هذه الدراسة هو تقييم الاحتياجات التعليمية للأطباء العموميين للمسؤولية الاجتماعية من وجهة نظر الخريجين الطبيين والخبراء التربويين. **الطريقة:** هذه الدراسة من ناحية الهدف تطبيقية ومن ناحية جمع البيانات توصيفية من مُط الارتباط مع التركيز على نموذج المعادلة الهيكلية. كانت أداة القياس عبارة عن استبيان. شملت المجموعة الإحصائية جميع الخريجين الطبيين الذين قد مضى على الأقل سنة واحدة من تخرجهم، بالإضافة إلى خبراء تربويين (مدراء تربويين، إدارة التعليم والخبراء، ومدراء EDC)، مركز التعليم الطبي والتنمية جامعة مشهد للعلوم الطبية. كان هناك 140 شخصاً وقدر حجم العينة بـ 103 بطريقة صيغة كوكران.

**النتائج:** أظهرت النتائج وجود علاقة ذات دلالة إحصائية بين جميع المجالات (السريية والتعليمية والبحثية) باستثناء الدعم الاجتماعي والاستجابة الاجتماعية. **الخلاصة:** تشير نتائج البحث إلى أهمية الانتباه للاستجابة الاجتماعية في برامج تعليم الأطباء العموميين على أساس نموذج CARE كدليل شاخص لتنفيذ خطة اعتماد. **الكلمات المفتاحية:** برنامج تعليمي؛ أطباء عموميين؛ مساءلة اجتماعية

### بررسی نیازهای برنامه آموزشی پزشکان عمومی بر اساس مدل CARE برای پاسخگویی اجتماعی

**زمینه و هدف:** پاسخگویی اجتماعی برنامه درسی به منزله جهت دهی تمامی فعالیت‌های آموزش پزشکی به سمت تربیت پزشکانی است که قادر به مرتفع کردن نیازهای سلامتی جامعه هدف باشند. از زمانی که آموزش پزشکی به سمت جامعه محوری و جامعه نگری سوق پیدا کرده است، به مفهوم پاسخگویی اجتماعی آموزش پزشکی توجه شایانی معطوف گردیده است. لذا بزرگترین چالش دانشکده‌های پزشکی در آینده نیاز آنها به کوشش برای نشان دادن اثر بیشتر بر سلامت از طریق رابطه پیوند خورده با جامعه است، که این همان هدف پاسخگویی اجتماعی است. هدف این مطالعه بررسی نیازهای آموزشی پزشکان عمومی برای پاسخگویی اجتماعی از دیدگاه فارغ‌التحصیلان رشته پزشکی و کارشناسان آموزشی می باشد.

**روش:** این مطالعه از نظر هدف کاربردی و از نظر شیوه گردآوری داده ها توصیفی از نوع همبستگی با تاکید بر مدل معادلات ساختاری است. ابزار سنجش پرسشنامه بود. جامعه آماری شامل کلیه فارغ‌التحصیلان رشته پزشکی که حداقل یکسال از فارغ‌التحصیلی آنها گذشته بود و همچنین کارشناسان آموزشی (کارشناس آموزش گروه، معاون آموزشی گروه‌ها و کارشناسان EDC) مرکز مطالعات و توسعه آموزش پزشکی دانشکده علوم پزشکی مشهد به تعداد 140 نفر بودند که حجم نمونه به وسیله فرمول کورکان به تعداد 103 نفر برآورد شد.

**یافته ها:** یافته ها نشان داد که بین تمامی حوزه ها (بالینی، آموزشی و پژوهشی) به جز حوزه حمایتی با پاسخگویی اجتماعی رابطه معنی داری وجود دارد.

**نتیجه گیری:** نتایج تحقیق بیانگر اهمیت پرداختن به پاسخگویی اجتماعی در برنامه های آموزشی پزشکان عمومی بر اساس مدل CARE به عنوان یک ابزار راهنما برای اجرای برنامه پاسخگویی است.

**واژه های کلیدی:** برنامه آموزشی؛ پزشکان عمومی؛ پاسخگویی اجتماعی

### CARE ماڈل کے مطابق جنرل فزیشنز کے نصابی ضرورتوں کو پورا کرنے کا جائزہ

**بیک گراؤنڈ:** میڈیکل کا نصاب جو سماج کی ضرورتوں کو پورا کرتا ہو، ایسے ڈاکٹروں کی ٹریننگ کے معنی میں ہے کہ جو معاشرے کی طبی ضرورتوں کو پورا کر سکتے ہیں۔ جب سے طبی تعلیم کو سماجی ضرورتوں کی بنیادوں پر استوار کیا گیا تو اس نے سماجی ضروریات کو مد نظر رکھتے ہوئے بے حد ترقی کی ہے۔ اسی اصول کے مطابق دنیا کی بہترین اور بڑی بڑی میڈیکل یونیورسٹیوں کے سامنے یہ چیلنج آگیا کہ انہیں اپنے معاشرے کو نظر میں رکھتے ہوئے طبی عملے کی ٹریننگ کرنی ہوگی۔ اسی کو ہم سماجی ضرورتوں سے تعبیر کرتے ہیں۔ اس تحقیق کا هدف جنرل فزیشنز کی تعلیمی ضرورتوں کا جائزہ لینا ہے تا کہ وہ سماجی ضرورتوں کو پورا کر سکیں، اس تحقیق میں میڈیکل فارغ التحصیل طلبا اور میڈیکل تعلیمی سرگرم عمل افراد کی نظر جاننے کی کوشش کی گئی ہے۔

**روش:** اس تحقیق میں سوالنامہ دیا گیا تھا، یہ سوالنامہ ان ڈاکٹروں کو دیا گیا تھا جنہوں نے ایک سال قبل اپنی تعلیم مکمل کی تھی اسی طرح سے میڈیکل تعلیم دینے والے ماہرین کو بھی دیا گیا تھا۔ یہ تحقیق مشہد کی میڈیکل یونیورسٹی میں انجام دی گئی تھی اور اس میں ایک سو چالیس افراد نے شرکت کی تھی۔ کورکان فارمولے کے تحت ایک سو تین افراد کو شرکت دی گئی۔

**نتیجے:** اس تحقیق کے نتائج سے معلوم ہوتا ہے کہ طبابت کے کلینیکل، تعلیمی اور تحقیقاتی شعبے سماجی ضرورتوں کے جزو ہوئے ہیں۔

**سفرارش:** اس تحقیق سے یہ ثابت ہوتا ہے میڈیکل تعلیم میں بالخصوص جنرل فزیشنز کے نصاب میں سماجی ضرورتوں پر تاکید کرنا ضروری ہے۔

**کلیدی الفاظ:** تعلیمی نصاب، جنرل فزیشنز، سماجی ضرورتیں

## 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 (1).

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 an important role in creating a social responsiveness culture in faculties, are defined.

In fact, CARE is a model for social responsiveness that consists of four main components: clinical activities, advocacy, research, and education programs.

**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, 103 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 1. Statistical characteristics and statistical indices of verifiable factor analysis of research tool components**

Component	RMR	GFI	CFI	RMSEA
Clinical Activities	0.07	0.90	.086	0.6
Advocacy Programs	0.06	0.93	0.91	0.6
Research	0.05	0.91	0.90	0.7
Education	0.02	0.94	0.98	0.04

Significance Level	t Values	Path Coefficient	Path
0.00	3.87	0.93	Social Responsiveness → Education
0.02	5.21	0.75	Social Responsiveness → Clinical
0.03	3.76	0.44	Social Responsiveness → Research
0.59	1.01	0.12	Social Responsiveness → Advocacy

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.

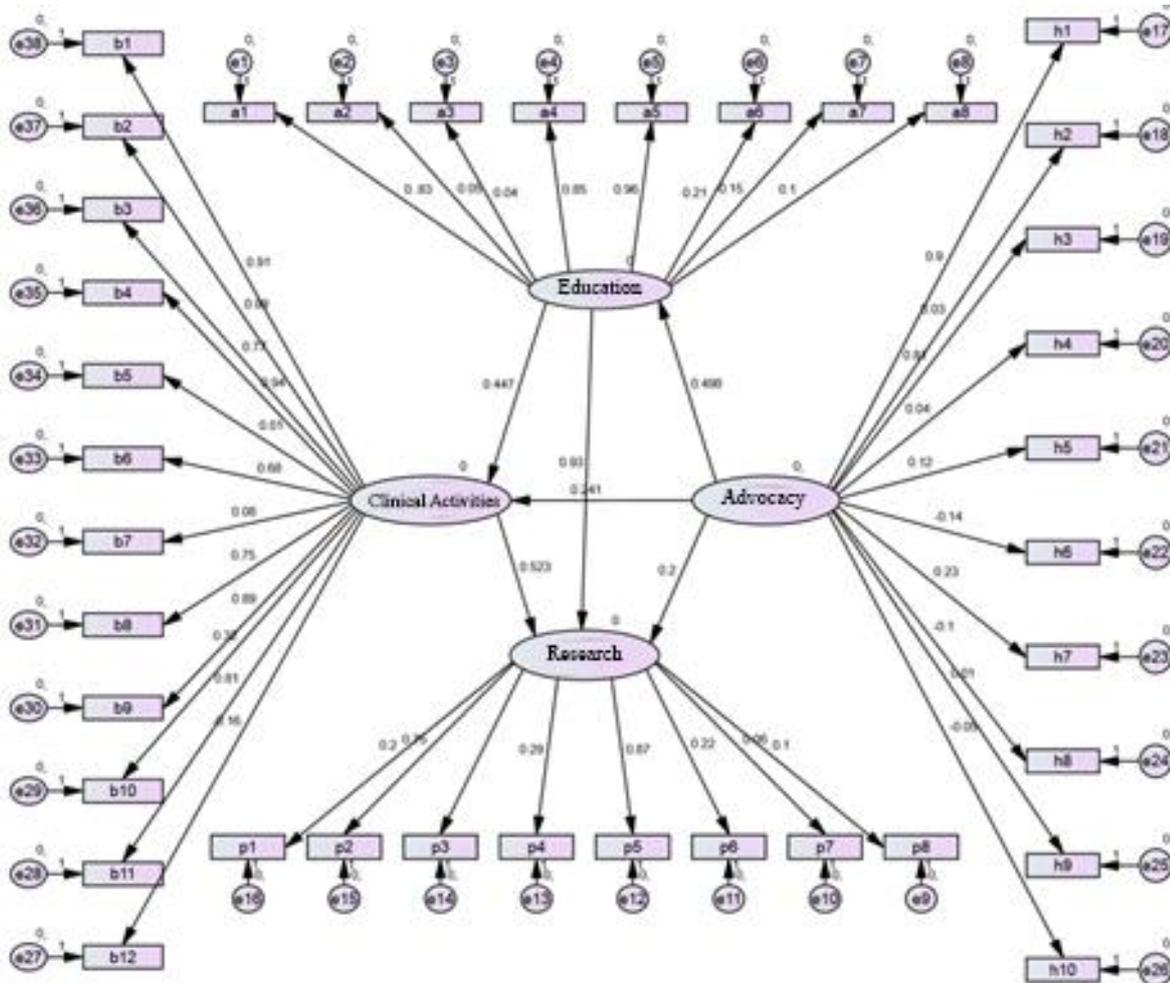


Figure 1. Conceptual fitted model in standard estimation mode

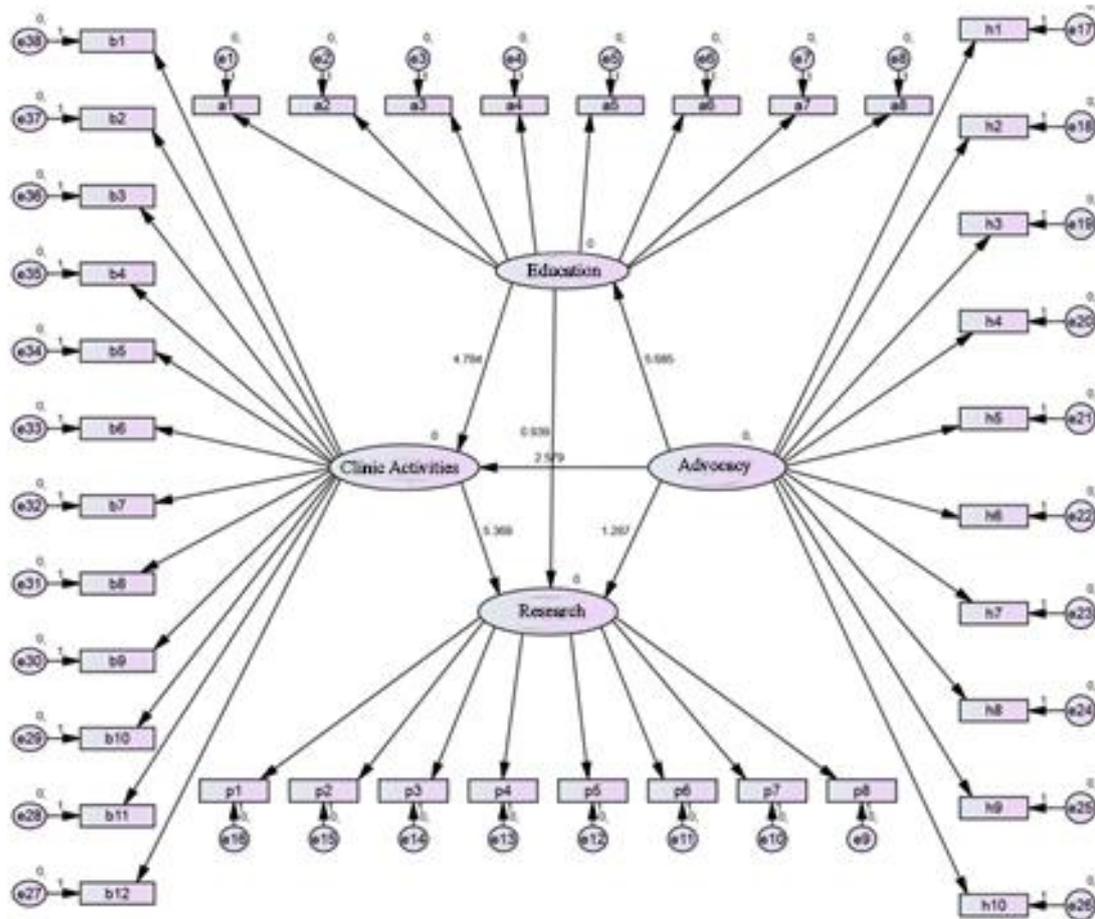


Figure 2. Conceptual fitted model fitted in the meaningful mode of the parameters

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.

Variable	CV Com	CV Red
Research	0.225	0.219
Education	0.263	0.26
Clinical	0.248	0.260
Advocacy	0.282	0.014

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

**Table 4. Regression coefficient and significance of the relationship between education and research component**

Hypothesis	Direct Rout	Regression Coefficient	t	Result
1	Education → Research	0.93	3.87	Rejected
2	Advocacy → Research	0.20	1.28	Rejected
3	Clinical → Research	0.52	5.36	Confirmed
4	Educational → Clinical	0.44	4.78	Confirmed
5	Advocacy → Educational	0.49	5.68	Confirmed
6	Advocacy → Clinical	0.24	2.57	Confirmed

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 need 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.

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

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