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# Higher education geographic expansion strategic model in Iran: a qualitative study

Shahram Yazdani, Maryam Akbari Lakeh\*

Department of Medical Education, School of Medical Education, Shahid Beheshti University of Medical sciences, Tehran, Iran

## Article info

### Article Type:

Original Research

### Article History:

Received: 12 Mar. 2016  
Accepted: 8 Oct. 2016  
published: 22 Dec. 2016

### Keywords:

Geographic expansion  
Higher education  
Strategic model

## Abstract

**Background:** After the Islamic revolution in Iran, university admission multiplied greatly in a short time. In addition to considering the policy that guides the action plan to expand higher education (HE), we need to design strategic planning in this area for sustainable development. The main objective of this study was to create a model for how to develop HE in different geographic places in our country.

**Methods:** According to the policy of HE development, we designed this study in the Ministry of Health and Medical Education (MOHME) to find out how to foster the development of HE in different geographic places in our country. For developing a HE geographic expansion model (HEGEM) appropriate to our country, Hugh McKenna's qualitative concept analysis was designed and performed over 2 years. First, the problems were detected, and then conceptually clarified and analyzed. After that, we compared our primary model components, which were obtained at the end of the analysis, with the experiences of different countries, and then revised our model. Then, in order for the extracted preliminary policy draft of HEGEM to be applicable in the country, an expert panels' group discussions and policy survey were implemented by 8 experts in policymaking and HE program administrations. Lincoln and Guba eligibility criteria were considered.

**Results:** Eight themes were extracted that greatly affected HEGEM in health systems and medical education in Iran including massification of HE, capacity for self-actualization in HE, types of division in HE, the appropriate number of HE institutions, size of HE centers, access to elite universities and avoidance of migration within the country, decentralization of HE and development of spatial planning for the public health network. The policy operational model of HEGEM was finalized and presented as a practical package for implementation in the whole country.

**Conclusion:** For promotion of community health and improvement of the national and international position of Iran's medical universities and HE centers, policymakers should consider the diverse factors that influence HE expansion in our developed model.

**Please cite this article as:** Yazdani S, Akbari Lakeh M. Higher education geographic expansion strategic model in Iran: a qualitative study. Res Dev Med Educ. 2016;5(2):69-73. doi: 10.15171/rdme.2016.014.

## Introduction

Throughout the world, the human development index (HDI) is considered the most important indicator of development.<sup>1</sup> After the Islamic revolution in Iran, human resources development accelerated at various levels. In the medical sciences sector, the lack of skilled human power, especially in the health service provided in many areas, was greatly resolved. Medical universities in all provincial capitals and even in some big cities of the country were established.<sup>2</sup> University admission multiplied in a short

time. A few years later, the number of graduates also multiplied.<sup>3</sup> For sustainable development, we need to design strategic planning in this area. Thus, in order to support the governments' Socio-Economic Development Plan 2010, a higher education (HE) development policy was designed. This policy guides the action plan to expand HE.<sup>4</sup> According to this policy, we designed the study in the Ministry of Health and Medical Education (MOHME) to find out how to foster the development of HE in different geographic places in our country.

\*Corresponding Author: Maryam Akbari Lakeh, Email: [m.akbari@sbmu.ac.ir](mailto:m.akbari@sbmu.ac.ir)



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As we reviewed the literature, we found that international experience showed that massification in HE increased the capital knowledge level, which is a good indicator of development in any country.<sup>3</sup> However, the development should be balanced and proportionate to our needs. We know that HE plays an important role in the development of the region. But, where and how should HE be established? Should an area be developed and then HE established in it? Or should HE be as part of an area's infrastructure? Many public HE institutions in our country have been created for the recent purpose which is developing HE as part of an area's infrastructure. But how much of this trained manpower has stayed in the region and promotes growth and development in it? Will local selection increase the chance of trained manpower staying in the region?

We designed and implemented this study as an MOHME project about 2 years to answer the following questions: What is the model of development for the institutions of HE and medical universities in our country? What needs to be done to achieve the objectives of a vision and comprehensive map of the country? How many students should be trained and in which sections of the health field to meet the country needs without inflation? What facilities, funding and academic staff are needed to achieve these indicators? How should we raise the quality of human resources trained in accordance with the country's needs and universal standards?

### Materials and Methods

This qualitative study was designed and performed over 2 years in order to develop a higher education geographic expansion model (HEGEM) appropriate for our country. A number of experts and specialists in this field were gathered. First, the problems were detected, conceptually clarified and analyzed by Hugh McKenna's qualitative method of concept analysis for model development. During the concept analysis, we compared our model components, which were obtained gradually through the analysis, with the experiences of different countries, and then revised our model components. At the end of some steps of concept analysis, the primary policy draft for HEGEM was extracted. In order for this preliminary draft to be applicable in the country, an expert panels' group discussions and policy survey were implemented by the other steps of Hugh McKenna's concept analysis. Then at the end of the study, the policy operational model was finalized and presented for implementation in the whole country.

We chose the concept analysis of Hugh McKenna for developing the HEGEM model. In this method, a qualitative approach was used, in which the main concept was elaborated through contextual values.<sup>5</sup>

Through Hugh McKenna's concept analysis method stages 1-7, we selected the HE geographic expansion for concept analysis onset, determined and defined the purpose of concept analysis for this reason, identified and specified the meaning of HE geographic expansion by determining

the attributes that define it, identified and implemented model and alternative cases for more clarification of the semantic network of HE geographic expansion and identified antecedents and consequences of it. Through drawing the strategy for searching different databases, main documents were selected as the basis for concept analysis and we continued to review them until reaching saturation. After determining the components of HE geographic expansion, primary models were extracted from the documents.

In the eighth step, noticing contexts and values, after extracting the critical components of the concept of HE geographic expansion, a systematized literature review was carried out which were used to verify our results validity and to compare strategies in Iran with the ones used throughout the world. The general opinions of experts were then obtained during five expert panel group discussions, each including 8 participants and lasting 4 hours. The participants were selected by purposive sampling from among those with experience in policymaking and administration of HE programs. Our goal was to draw a diversified group together to increase our investigation of different outlooks. The ultimate objective of these meetings was to analyze the HEGEM for developing the native strategy in Iran. Thus, the participants were called through MOHME, and they were realized the significance of the sessions.

Since we intended to emphasize the factors thought to influence HEGEM, all the experts focused on this topic in the sessions. Two moderators were present in each session: one was knowledgeable about medicine and medical education, and the other knew about management and strategic planning. In the initial session, we described the basic conception of the study and clarified the objectives of the meetings, and then asked questions in regard to possible points that could affect Iran's medical education system.

After that, participants discussed and listed what they got as HEGEM in medical education. The discussions were then documented on audiotapes. Participants continued discussion until no new opinions were shared.

An interim analysis was performed so that the results could be used in other sessions.<sup>6</sup> Two researchers examined the transcripts and discussion notes independently, and then the data was evaluated using a thematic framework approach. A list was made for the forthcoming sessions based on this examination.

In these sessions, the experts were required to evaluate and rank the listed themes and then examine their effects on medical education, in addition to propose feasible strategies to handle these effects. We focused on the impacts and strategies in continued sessions, using methods to gather and analyze data similar to the ones used for the first session. A final report including the combined results from all panel sessions was prepared.

While panel discussion groups were ongoing, the researchers performed a literature review on themes influencing HEGEM in medical education and possible better

strategies used in Iran and other countries for step 9 of Hugh McKenna's analysis: identification and designation of the empirical indicators of HE geographic expansion. This review was completed to compare strategies in Iran with those used in other countries and confirm the validity of our results. The final operational and contextual model of HE geographic expansion in Iran was developed for implementation throughout the whole country. We used data triangulation and member check<sup>7</sup> to increase the credibility of our results, and considered them as the eligibility criteria of study. According to Lincoln and Guba's method, confirmability was performed using field notes, memos, transcripts and the researchers' reflexivity.

### Results

The panel experts agreed on 8 themes extracted through the concept analysis and believed that they greatly affected HEGEM in health systems and medical education in Iran. Table 1 shows the eight extracted themes which panel experts agreed on as the critical themes of HEGEM in health systems and medical education in Iran.

Based on the themes extracted, the panel experts agreed on and finalized HEGEM in our context as "decentralization and mass education in health sciences by taking advantage of the city health network infrastructure" for human capital development, massification of HE, providing equitable access to the opportunities of college education across the country, provision of HE at the undergraduate level for all potential volunteers in the city of birth, minimization of educational migration in the country and leveling of educational services in the country.

The panel experts finalized the procedure of HEGEM through decentralization that is using public hospitals in the city centers as the educational health centers (training camp at State University), and delegating (integrated health HE) both health and educational responsibility to public hospital. This procedure has some advantages such as: the use of first-hand training fields, use of work capacity of Behvarz training center and city hospitals, use of apprenticeship educational model, use of work-based learning and the focus of central province universities on graduate HE.

Levels of educational services in HEGEM are: world class universities of medical sciences, national class universities of medical sciences, provincial class universities of medical sciences, medical sciences school and health HE center. The operational guide for implementation of HEGEM was proposed with approval of:

Massive areas of the health system, rating and ranking the universities and HE institutions of health system, the mission of universities based on ranking, criteria of universities with international function, criteria of establishment of other universities and institutions of HE in health system, use of the network infrastructure of HE in the development of health centers in the cities.

The universities and HE health centers can be expanded on the basis of this document.

### Discussion

The themes investigated in panel discussions were roughly compatible with the ones in other studies factors influencing HE geographic expansion in medical education. The advantage of having the community-oriented HE centers in our developed model is that most of the content of the curriculum was developed in direct contact with the community and patients.<sup>8</sup> Because of the high affinity between academic and clinical areas, the expansion of universities' capacities was done in accordance with the clinical fields' expansion. Technical training institutes were more focused on practical and skillful issues and aimed at the promotion of services at the community level.<sup>9</sup>

In the near future, medical education in Iran must experience major changes for appropriate geographic expansion. When preparing for these changes, policymakers should take in to consideration the different factors that influence HE expansion in our developed model (HEGEM). The ultimate goal should be the education of students who are able to foster community health and improve the status of Iran's medical universities and HE centers internationally. Reviewing the related themes over different periods of time should help us to foresee the succeeding educational expansion needs.<sup>10</sup> Factors promoting HE should be considered in Iran's policies and strategies as they were used by other countries.<sup>11,12</sup> In addition, a review of the policies and strategies based on HEGEM could help policy planning for the medical education in Iran.

### Conclusion

Finally, beside all of the advantages of HEGEM, this question really should be answered by policy makers: "Does the HE expansion promote the equality of educational opportunities?" We found some factors with potential explanation of the difference between a positive effect of HE expansion on fostering more accessibility to HE, but not on graduation from HE.<sup>13</sup> However, more analysis and data are needed to differentiate between these hypotheses. Overall, our studies insinuate at the fact that the fast expansion of HE in Iran could have only made a small increase in equality of opportunity in terms of completion of HE and may relatively explain why HE achievement in Iran is still greatly depended on some other factors, such as parents' education, etc. Therefore, further analysis is needed to distinguish between these hypotheses.

### Ethical approval

This research was part of MOHME project that was approved by the Ethics Committee of MOHME. Ethical aspects were considered in all steps of the study and texts belonging to other authors that have been used in any part of this study have been fully referenced.

### Competing interests

Authors declare that they have no competing interests.

### Acknowledgments

We would like to appreciate the efforts of all the groups' experts

**Table 1.** Eight themes of HEGEM

| Main Themes   | Themes description (contains categories)  |
|---|---|
| (1): Massification of higher education  | This theme was identified by many of the participants. Providing the college education for all the talented youth of our country. Establishment of community colleges, when the maximum capacity of the country could not guarantee full coverage of higher education. They also expressed Gross Tertiary Enrolment Ratio as massification index.   |
| (2): Higher education capacity for Self-actualization                         | The Self-actualization need for young people is mainly met through university studies. The participants pointed that expected years of schooling index should reflect future demand in the education market in our country. Policies to expand the capacity of higher education were emphasized.  |
| (3): Higher Education types of division                                       | The participants agreed with some of the Carnegie and UNESCO Classification of Institutions of Higher Education for our country such as: <ul style="list-style-type: none"> <li>• Doctoral Research Universities: Extensive; which have at least 50 University doctoral graduates in 15 different disciplines.</li> <li>• Doctoral Research Universities: Intensive; which have at least 10 doctoral graduates in at least three different fields. Or universities at which at least 20 doctors are graduated each year.</li> <li>• Master Colleges and Universities; Colleges and universities in addition to a wide range of undergraduate majors, have at least 40 master graduates each year in three different fields.</li> <li>• Baccalaureate Colleges; Colleges which have various training programs at the undergraduate level.</li> <li>• Associate's Colleges Universities that mainly offer associate's degree or a two-year undergraduate courses.</li> <li>• Universities educational and research institutions work together, to train students in different levels, including master's and doctoral.</li> <li>• Technical training institutes: Institutions that provide professional training at the undergraduate level.</li> <li>• Higher Education Center: Semi-independent institutions for the education of undergraduate students.</li> <li>• Community oriented Higher Education Center; Semi-independent institutions that train technician students.</li> </ul> |
| (4): The appropriate number of higher education institutions                  | Although in the literature of higher education, specific number for the proportion of population to higher education institutions is not recommended; this ratio in most developed countries is between 10 and 20 per million. Participants emphasized on developing research universities in our country.  |
| (5): Size of Higher Education Center  | The participants agreed on size as an indicator of the efficiency and effectiveness the very same social credibility. Higher education center size has its own advantages and disadvantages. Our various higher education goals determined the size and number.   |
| (6): Access to elite universities and avoid migration within the country      | During our discussions, access to job opportunities was emphasized as the great reason of migration within the country. Intra-national brain drain is for educational opportunities access. Elite migration within the country has devastating impact on the development of their home cities. Migration within the country is also recognized as the background of brain drain abroad. Providing elite educational opportunities in the cities was emphasized in experts' panel.   |
| (7): Decentralization of higher education                                     | In order to increase the equitable access to educational opportunities as well as part of the mass movements of higher education, decentralization can be taken place through: <p>De concentration: To transfer function to more environmental organization under the authority of the first upstream organization.</p> <p>Delegation: To transfer function to more semi-independent environmental organization.</p> <p>Devolution: To transfer function to more independent governmental environmental organization.</p> <p>Privatization: To transfer function to more independent private environmental organization.</p>  |
| (8): Take advantage of spatial planning Development for public health network | The experts agreed on taking advantage of spatial planning development for public health network on the basis of the five principles: geographic access, cultural acceptance, classification and integration of services and referral system, consistent sex and number of employees with health needs, using local staff in the health centers, and decentralization of management at the city level.  |

Abbreviation: HEGEM, higher education geographic expansion model.

who have participated in the execution of this panel as well as the MOHME for their support.

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