

### Identifying the Educational Needs for Developing an Entrepreneurship-Based Curriculum from the Perspective of Students and Faculty Members of Health-Associated Disciplines

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**Background:** The most fundamental step in the development of a curriculum is to determine the educational needs. This study aims to identify the educational needs from the viewpoint of students and faculty members of health-associated disciplines in order to develop an entrepreneurship-based curriculum.

**Methods:** The study is applied in terms of purpose and descriptive-survey in terms of method. Moreover, needs assessment is based on inductive-comparative model. The research population included top-level documents, research literature, and all students and faculty members of the faculty of health affiliated to Birjand University of Medical Sciences during the academic year 2017-2018. Based on Krejcie and Morgan's table, the sample size was computed as 218 people, who were selected randomly. Moreover, 20 faculty members were incorporated by census. Data were collected by reviewing top-level policy-associated documents, reviewing the related literature, and conducting a needs assessment. The questionnaire for needs assessment comprised of 49 items. The validity of the questionnaire was confirmed by health education and medical education experts. The reliability of the questionnaire was obtained using Cronbach's alpha as 79%. Data were analyzed in SPSS software-version 16 using descriptive statistics (mean).

**Results:** The results showed that entrepreneurial education and knowledge with the mean score 4.38 and entrepreneurship-oriented social environment of the faculty of health with the mean score 4.10, as reported respectively by students and faculty members, were the two main educational need priorities for the health curriculum.

**Conclusion:** According to the findings, designing and developing a curriculum that can increase the entrepreneurship power and train creative and innovative students at the faculty of health is one of the main needs of students.

**Keywords:** Curriculum, Educational needs, Entrepreneurship, Health-associated disciplines

### شناسایی نیازهای آموزشی برای تدوین برنامه درسی مبتنی بر رویکرد کارآفرینی از دیدگاه دانشجویان و اساتید رشته های بهداشتی

**زمینه و هدف:** نخستین گام در راه تدوین برنامه درسی، تعیین نیازهای آموزشی است، که سنگ زیرین ساختمان آموزش است. هدف مطالعه حاضر شناسایی نیازهای آموزشی برای تدوین برنامه درسی مبتنی بر رویکرد کارآفرینی از دیدگاه دانشجویان و اساتید رشته های بهداشتی بود.

**روش:** این تحقیق از حیث هدف جزء تحقیقات کاربردی و از نوع نیاز سنجی بر اساس الگوی قیاسی-استقرایی است و از حیث روش، توصیفی-پیمایشی است. جامعه پژوهشی این تحقیق شامل اسناد بالادستی، ادبیات تحقیق و کلیه دانشجویان و اساتید دانشکده بهداشت در سال تحصیلی ۹۶-۹۷ بودند. تعداد دانشجویان مورد مطالعه بر اساس جدول کرجسی و مورگان، ۲۱۸ نفر برآورد و به شیوه تصادفی ساده انتخاب شدند. همچنین ۲۰ عضو هیات علمی به صورت سرشماری مورد بررسی قرار گرفتند. جمع آوری اطلاعات در سه گام بررسی سیاست های بالادستی، ادبیات تحقیق و پرسشنامه نیازسنجی انجام شد. پرسشنامه نیاز سنجی دارای ۴۹ سوال بود که روایی پرسشنامه به تأیید صاحب نظران آموزش بهداشت و آموزش پزشکی رسید، و پایایی پرسشنامه با استفاده از شیوه الفای کرونباخ ۷۹٪ بدست آمد. برای تحلیل داده ها از نرم افزار SPSS 16 و از آمار توصیفی (میانگین) استفاده شد.

**یافته ها:** نتایج نشان داد که اکثر دانشجویان و اساتید بیان کردند که در برنامه درسی رشته های بهداشتی باید آشنایی با طراحی طرح کسب و کار گذاشته شود و همچنین بر دانش کارآفرینانه و بهبود تقویت کار گروهی و ایجاد محیطی همراه با زیرساخت های کارآفرینانه بیان کردند.

**نتیجه گیری:** با توجه به یافته ها، طراحی و تدوین برنامه درسی که بتواند باعث افزایش قوه کارآفرینی و پرورش دانشجویان خلاق و نوآور در دانشکده بهداشت شود از نیازهای اصلی دانشجویان محسوب می شود.

**واژه های کلیدی:** برنامه درسی، رشته های بهداشتی، کارآفرینی، نیازهای آموزشی

### معرفة الإحتياجات التعليمية الضرورية من أجل تطوير البرنامج التعليمي المعتمد على الريادة من وجهة نظر الطلاب الجامعيين وأساتذة الفروع الصحية

**الأرضية والهدف:** إن الخطوة الأولى في طريق تطوير البرنامج التعليمي هي معرفة المتطلبات التعليمية، التي تشكل اللبنة الأساسية في بناء التعليم. الهدف من الدراسة الحالية هي معرفة المتطلبات التعليمية من أجل تطوير البرنامج التعليمي المبني على الريادة وذلك من وجهة نظر الطلاب الجامعيين وأساتذة الفروع الصحية.

**الطريقة:** هذه الدراسة من حيث الهدف هي جزء من الدراسات العملية ومن حيث النوع حاجة قياس حسب النمط القياسي - الإستقرائي ومن حيث الطريقة توصيفية - مسحية. المجموعة الغاضفة لهذا التحقيق تشمل ملفات المرحلة العليا و أدبيات التحقيق وكل الطلبة والأساتذة في كلية الصحة في سنة ۲۰۱۷-۲۰۱۸.

عدد الطلاب المشمولين في هذه الدراسة حسب جدول كرجسي و مورجان ۲۱۸ طالب وقد تم إختيارهم بطريقة عشوائية بسيطة. وتم أيضاً إختيار عشرين عضو من أعضاء الهيئة التدريسية. تم جمع البيانات على ثلاث مراحل أولاً تقييم سيامة الملفات العليا ثم أدبيات التحقيق ثم تقييم الإحتياجات. ورقة الأسئلة الإستفسارية للإحتياجات تحوي ۴۹ سؤال وكانت هذه الأسئلة قد نالت رضى أصحاب الخبرة في التعليم الصحي والتعليم الطبي. دقة الأسئلة تم فحصها بطريقة الفاي كرونباخ ۷۹٪. من أجل تحليل البيانات تم الإستفادة من برنامج spss16 والإحصاء الوصفي (المتوسط).

**النتيجة:** أثبتت النتائج أن أكثر الطلبة والأساتذة أشاروا إلى أن البرنامج التعليمي في الفروع الصحية يجب أن يوضع بطريقة التعريف على طبيعة العمل وأيضاً تحسين وتقوية العمل الجماعي في محيط العمل.

**النتيجة:** بالإنتباه للنتائج فإن تخطيط وتطوير البرنامج التعليمي بحيث يؤدي إلى تقوية الريادة وتخرج الطلبة النابغين في كلية الصحة هي الإحتياجات الأساسية للطلبة.

**الكلمات الدلالية:** الإحتياجات التعليمية، البرنامج الدراسي، الريادة، الفروع الصحية

### میڈیکل کے مختلف شعبوں کے اساتذہ اور طلباء کی نظر میں ایسے میڈیکل نصاب کی تدوین کے لئے جو روزگار فراہم کر سکتا ہو، ضروریات کا جائزہ

**بیگ گراؤنڈ:** درسی نصاب کی تدوین کا اولین ہدف تعلیمی ضرورتوں کو پورا کرنا ہے، کیونکہ یہ امر تعلیمی نظام کی ریڑھ کی ہڈی ہے۔ اس تحقیق کا ہدف میڈیکل کے مختلف شعبوں میں ایسے نصاب کی تدوین کرنا ہے جس سے طلباء کو روزگار بھی فراہم ہوتا ہو اسی وجہ سے طلباء اور اساتذہ سے اس کی ضروریات معلوم کی گئی ہیں۔

**روش:** اس تحقیق میں طویل مدت منصوبہ بندی کرنے والے اساتذہ، دوہزار سترہ اور دوہزار اٹھارہ کے میڈیکل طلباء نے شرکت کی اور اس میں میڈیکل ریسرچ مواد سے بھی استفادہ کیا گیا ہے۔ کرجسی اور مورگان کی اسکیل کے مطابق تحقیق میں شرکت کرنے والوں کا رینڈم انتخاب کیا گیا۔ اس میں دو سو اٹھارہ افراد نے شرکت کی البتہ میڈیکل اکیڈمیک کونسل کے بیس ارکان نے بھی شرکت کی۔ ڈیٹا سولنامے سے حاصل کیا گیا، اس سولنامے میں انچاس سوال تھے جو مذکورہ بالا نصاب کے لئے ضروری چیزوں کے بارے میں تھے۔ ڈیٹا کا تجزیہ ایس پی ایس ایس سولہ سے کیا گیا۔

**نتیجے:** اس تحقیق سے معلوم ہوتا ہے کہ اکثر طلباء اور اکیڈمیک کونسل کے اراکین نے کہا ہے کہ میڈیکل نصاب میں مستقبل میں پیشہ ورانہ سرگرمیوں یعنی روزگار کے بارے میں بھی معلومات سموتی جانی چاہیں اور پیشہ ورانہ سرگرمیوں کے بارے میں طلباء کو مزید معلومات فراہم کی جانی چاہیں۔

**سفاہش:** ان نتائج کے پیش نظر یہ معلوم ہوتا ہے کہ میڈیکل طلباء کی بنیادی ضرورت یہ ہے کہ ان کی تعلیمی نصاب سے نہ صرف اچھے اور باصلاحیت ڈاکٹروں کی ٹریننگ ہونی چاہیے بلکہ اس سے ان کے روزگار کی ضمانت بھی ملنی چاہیے۔

**کلیدی الفاظ:** تعلیمی ضرورتیں، تعلیمی نصاب، روزگار، میڈیکل شعبے۔

## INTRODUCTION

The higher education system contributes significantly to the economic, social, and cultural development of societies. In Iran, similar to other places, higher education is infused with the responsibility of training the specialized human force required for the various sectors of society in the fields of industry, agriculture, services, etc. (1). Alongside this, education is a key mechanism for the development of people's skills and human resources. In case people's skills are promoted, they will work more to ensure the welfare and well-being of families, community, and country in large. If the curriculum, as the heart of the educational system, is practiced systematically, it can improve the learning process and hence increase the skills of the human force (2).

The first step in developing a curriculum is to determine the educational needs (3). Needs assessment is, in fact, the foundation of the education building, and the more solid this foundation is, the more durable and invincible the building constructed on it will be. In the realm of education, needs-assessment is considered as one of the fundamental and essential components of the planning process, and wherever there is a requirement to consider designing and adopting a set of educational measures, needs-assessment comes to fore as a prerequisite (4). The most efficient way to determine the contents of appropriate education is to analyze needs. The information obtained from needs-assessment can be employed to develop the training program and to enhance the skills and knowledge of the specialist workforce (5). Therefore, needs-assessment is the process of collecting and harmonizing the views of individuals and groups concerning the educational needs. Determining the educational needs is a starting point in the development of educational programs (6).

An important part of the higher education system is the education of medical science, which deals with the life of humans. Universities of medical sciences, along with the provision of health services to the general population, also have an important role in the training of skilled human resources and specialists for different sectors of society. Graduates of health-associated disciplines play a significant role in providing healthcare services (2).

On the other hand, the preparation and training of medical science students for employment has always been one of the goals of the higher education system, which may also be referred to as the most important goal in the current era. The substantial increase in the number of universities and higher education institutions as well as their output, i.e., the huge number of graduates, have directed the focus of higher education institutions in recent decades to conceptualizing and measuring different dimensions of quality in higher education (7). Over the last few decades, with the rising unemployment rate among university graduates, criticism has grown against the educational system. In this regard, some officials and experts have attempted to link curricula to the needs of society and the world of professional work by taking certain measures in order both to prevent from the unemployment of graduates and to fulfill the demands of the various economic sectors of the country for skilled and

specialized manpower (8).

Also, with the advent and fast development of technology, students and university graduates have also found that they will set foot in varying, dynamic, and complex working environments; factors such as globalization, competition, and rapid technological growth have changed working opportunities; employers' expectations have changed, and they need staff who present entrepreneurial behaviors and attitudes (9).

In order to achieve this goal, one of the most important challenges facing the higher education system is the gap between theoretical knowledge and practical competencies of the graduates. Wilson (10) states that in order to cope with this challenge, one must establish a harmony between what the academic graduates learn and what the needs of the society are. Therefore, to bridge the gap between theoretical knowledge in medical sciences and community needs, entrepreneurship education should be considered.

Amini et al. (11) describe entrepreneurship as the creation of a valuable insight from zero, and believe that entrepreneurship is the process of creating and accessing opportunities and pursuing these opportunities irrespective of the resources that are available. Therefore, in their opinion, entrepreneurship involves the creation and distribution of value and benefits among individuals, groups, organizations, and society, and believe that this will be achieved when entrepreneurship has a desirable position in the form and structure of the curriculum of universities and training centers. Safari and Sami Zadeh (12) maintain that the inclusion of educational subjects such as the basics of business plan, business management, e-business, and entrepreneurial skills as a scientific and educational course in the curriculum is needed in order to develop the entrepreneurial knowledge and skills and to promote student's entrepreneurial awareness. Yamani et al. (13) report that the preliminary studies conducted on the trainings delivered in universities and higher education centers and on educational needs aiming at the creation and promotion of entrepreneurship have shown that these trainings are not compatible with educational needs to create and promote entrepreneurship.

Therefore, one of the efficient approaches that should be taken into consideration by the medical education planners in relation to the medical education process and its quality improvement is the entrepreneurial curriculum approach (14). In this approach to curriculum design, the main emphasis is on well-defined achievements in response to the needs of the community and the labor market (15). Entrepreneurial education is an activity used to transfer the knowledge and information needed to set up and run a business. In addition, it improves and develops non-entrepreneurial attitudes, skills, and abilities (16).

Since no curriculum with entrepreneurial approach has been designed and developed for students of health schools in Iran and because any curriculum design needs to measure the needs of learners and specialists, hence the need to delve into this issue and design a curriculum aiming to develop entrepreneurship skills of college students. Therefore, the present study sought to identify educational needs for

developing a curriculum based on entrepreneurial approach from the viewpoint of health-associated students and faculty members.

## METHODS

The study is applied in terms of purpose, and needs assessment is based on the inductive-comparative technique. The study was conducted in 2018 with the aim of designing an entrepreneurship-oriented curriculum in the faculty of health of Birjand University of Medical Sciences. The method is descriptive-survey. The research population included top-level documents, research literature, and all students and faculty members of the faculty of health affiliated to Birjand University of Medical Sciences during the academic year 2017-2018. Based on Krejcie and Morgan's table, the sample size was computed as 218 people, who were selected via simple randomization method. Students were incorporated who were at least in their second semester at university, thus first-semester students were excluded from the study. Given that the faculty members were 20, all of them were included through the census sampling method. Before the distribution of the questionnaires, the participants were explained about the confidentiality of the data collected, and their consent was taken to participate in the study verbally. Needs assessment and data collection were carried out in three main steps:

Step 1: High-level documents were checked with emphasis on entrepreneurship training. In this step, the high-level documents that emphasized entrepreneurship and entrepreneurship education were examined, and the highlights were extracted.

Step 2: In this step, the subject-related literature and domestic documentations were examined, and a semi-structured interview was performed with entrepreneurs and health education professionals. This step aimed to identify the knowledge, attitudes, skills, and abilities that students involved in health-associated disciplines must have. After reviewing the literature and the interviews, a list of students' educational needs was prepared.

Step 3: A needs assessment questionnaire was developed. To

determine and prioritize the educational needs, a questionnaire was developed based on the educational needs list that was obtained in the second step. The researcher-made questionnaire for needs assessment comprised of 49 items based on the educational needs extracted from the interviews. The items were scored on a 5-point Likert scale. The validity of the questionnaire was confirmed by health education and medical education experts. The reliability of the questionnaire was obtained using Cronbach's alpha as 79%. Data were analyzed in SPSS software-version 16 using descriptive statistics (mean).

## RESULTS

Demographic characteristics showed that out of the 218 students, 47 (21.6%) were male (mean age:  $20.24 \pm 1.14$  years) and 171 were female (78.4%) (mean age:  $19.12 \pm 1.24$  years). Out of the 20 faculty members, 11 (55%) were male (mean age:  $41.80 \pm 8.39$ ), and 9 (45%) were female (mean age:  $38.1 \pm 7.24$  years) (Table 1).

In the first step, high-level documents were examined, including Supreme Leader's speeches, resilient economy general strategies, general employment policies, Iran Perspective 1404 document, health policy's major policies, country's Comprehensive Map of Science, country's Comprehensive Map of Health, Supreme Council of Cultural Revolution's documents, the Health System Development Plan, and the Development and Innovation Plan for Medical Education. It was found that the majority of the high-level documents emphasized entrepreneurship and entrepreneurship education, whereby the design of a curriculum that could operationalize this purpose is needed (Table 2).

After it was found, according to the high-level documents and macro-policies, that curriculum design by entrepreneurial approach is required, the educational needs that health students needed to fulfill during their studies were extracted by interviewing health education professionals and entrepreneurs. Subsequently, these needs were prioritized on the basis of students and faculty members' views.

**Table 1. Demographic characteristics of participants**

Variable	Dimensions	Students		Faculty members	
		Frequency (218)	Percentage (91.6)	Frequency (20)	Percentage (9.4)
Gender	Man	47	21.6	11	55
	Woman	171	78.4	9	45
Discipline	Public health	87	39.9	-	-
	Professional health	109	50	-	-
	Environmental health	22	10.1	-	-
Academic rank	Instructor	-	-	6	30
	Assistant professor	-	-	12	60
	Associate professor	-	-	1	5
	Full professor	-	-	1	5

Table 2. High-level documents on the importance of entrepreneurship and approach to it	
Document	Year
Statement by the Supreme Leader in the meeting with workers and entrepreneurs	2008
	<ul style="list-style-type: none"> <li>- To initiate enterprises and to encourage entrepreneurs</li> <li>- To train human resources tailored to the current and future needs of the labor market</li> <li>- To enhance entrepreneurship power</li> <li>- To establish a comprehensive labor market information system</li> <li>- To support cooperative companies</li> <li>- To support the establishment and development of mutual funds</li> </ul>
Statement by the Supreme Leader in the meeting with entrepreneurs	2010
	<ul style="list-style-type: none"> <li>- The great Iran today needs more work and entrepreneurship than ever before so that it can rise like a fast-flying eagle in the midst of development, prosperity, and honor. Referring to the importance of work and entrepreneurship from the perspective of Islam, he discussed that employment, in addition to wealth creation, underlies the utilization of the treasure of human talents.</li> </ul>
Overall Employment Policies	2011
	<ul style="list-style-type: none"> <li>- To promote and strengthen the culture of work, production, entrepreneurship, and the use of domestic products as a national and Islamic value through the educational system and propaganda of the country</li> <li>- To train specialist, skilled, and efficient human resources tailored to the needs of the labor market (present and future) and to promote entrepreneurship power via the country's educational system</li> </ul>
Announcement of general policies on national production, and support for Iranian labor and capital	2012
	<ul style="list-style-type: none"> <li>- To manage currency resources with an emphasis on fulfillment of the needs of national production and entrepreneurship and the stability of the national currency</li> </ul>
General policies of resilient economy	2013
	<ul style="list-style-type: none"> <li>- To strengthen Jihadist culture in creating added value, wealth generation, productivity, entrepreneurship, investment, and productive employment, and to award a medal of resilient economy to those with outstanding services in this regard</li> </ul>
Meeting of the chairman and members of the Supreme Council of Cyberspace with the Leader of the Revolution	2015
	<ul style="list-style-type: none"> <li>- The expansion of communications technology industries and telecommunication technology industries through knowledge-based companies will have a major impact on job creation and transformation of the country's economy.</li> </ul>
Meeting of chancellors of universities and heads of research centers and incubation and science centers with the Supreme Leader	2015
	<ul style="list-style-type: none"> <li>- One of the ways to create employment for our graduates is the relationship between industry and the university. Industry and university should be interconnected.</li> </ul>
Statement by the Supreme Leader during the meeting with the President and the cabinet	2015
	<ul style="list-style-type: none"> <li>- To establish knowledge-based companies</li> <li>- To use science and technology parks</li> </ul>
Comprehensive Map of the Country	-
	<ul style="list-style-type: none"> <li>- To educate and empower the human capital, with emphasis on the training of pious, entrepreneurial, self-confident, creative, innovative, and capable people in the production of science, technology, and innovation commensurate with Islamic values and the needs of society</li> </ul>
The 20-year Vision of the Islamic Republic of Iran	-
	<ul style="list-style-type: none"> <li>- To strengthen conscientiousness, social discipline, the spirit of hard work and initiative, entrepreneurship, honesty and contentment, and efforts to improve the quality of production</li> </ul>
The general policies of the Fifth Development Plan by the Supreme Leader of the Revolution	-
	<ul style="list-style-type: none"> <li>- To establish effective communication between universities, research centers, and industry and related sectors of society</li> <li>- To empower the non-governmental sector for participation in the production of science and technology</li> <li>- To bring revolution in the education system with the aim of improving the quality of education based on the needs and priorities of the country in three fields of knowledge, skills, and education, as well as increasing mental and physical health of students</li> </ul>
Evolution and Innovation Packages in medical sciences: Transition towards the third generation university	2015
	<ul style="list-style-type: none"> <li>- To redefine the mission, goals, and functions of medical universities based on the entrepreneur university model</li> <li>- To design and implement entrepreneurial models in health in order to create and promote job positions of medical science graduates</li> <li>- To design and implement new production-oriented educational programs based on native and national needs in the field of medical science</li> </ul>

**Table 3. Prioritization of students' educational needs in health-associated disciplines with an entrepreneurial approach from students' perspectives based on mean scores**

<b>Educational need</b>	<b>Importance mean score</b>	<b>Educational need</b>	<b>Importance mean score</b>
Entrepreneurial education and knowledge	4.38	Social accountability spirit	3.62
Infusing and enhancing the spirit of hard work in students	4.24	Independence of health students	3.42
Strengthening the teamwork spirit in health students	4.18	Introducing healthcare businesses	3.34
Creating and improving the capacity to develop creative and personal ideas of students	4.16	Forward-looking attitude in health	3.32
Creating the atmosphere to support the innovative activities of health students	4.15	Skill of health students to analyze economic situations	3.28
Familiarity with the design and development of a business plan	4.14	Spirit of courage and integrity in health	3.21
Coherence of entrepreneurial activities in the field of health and forward-looking ability	4.13	Creating and enhancing students' ability to complete tasks	3.19
Creating and improving students' capacity to accept success and failure	4.11	Identifying and creating entrepreneurial opportunities	3.15
Encouraging health students to acquire skills	4.08	Common perspective and prospective strategy in health	3.08
Entrepreneurship-orientedness of the social environment of the health school	4.07	Providing and guaranteeing student's sense of accomplishment-seeking	3.02
Emphasis on practical trainings and health skills	4.05	Entrepreneurship-orientedness of faculty' culture	2.99
Creating and strengthening students' determination	4.05	Upgrading students' decision-making capacity	2.95
Entrepreneurship-orientedness of trainers (faculty members)	4.04	Marketing and understanding the marketplace for health-associated businesses	2.85
Continuous interaction between students and the environment (agriculture, industry, etc.)	4	Creating and strengthening the ability to identify original business ideas in the field of health	2.84
Improving students' capacity to do things without the need for others to help	3.99	Creating and improving the ability to control and monitor activities and affairs	2.74
Creating and enhancing the spirit of accountability in solving problems with personal effort	3.98	Creating and promoting the ability to turn talents into abilities and to enhance the capacity to envisage the future	2.65
Risk-taking spirit and power	3.98	Skill to create and develop opportunities in health	2.52
Creativity and innovation in the field of health	3.91	Skill of designing virtual and electronic spaces	2.32
Opportunity to address new enterprises in health	3.91	Capital and investment of knowledge-based companies	2.23
Creating and improving the capacity of change in health students	3.90	Skill of designing an operational situation in health centers	2.21
Establishing and improving the ability to plan and organize healthcare business units	3.85	E-commerce in the field of health	2.19
Correct and logical decision-making skill	3.82	Skill of resource collection and planning for healthcare businesses	2.18
The spirit of quitting conventional methods	3.74	Introducing economic resources in the field of health	2.12
Self-esteem and confidence in students	3.70	Creating and enhancing the capacity to accept academic and professional outcomes	2.10
The spirit to acknowledge changes and transformations	3.65		

Educational needs according to the findings of Table 3 from the students' perspective indicate that the highest mean score of responses (4.38) was related to entrepreneurship education and knowledge, while the lowest mean score (2.10) was related to creating and improving the capacity to accept academic and occupational outcomes.

Educational needs, according to the findings of Table 4 from the viewpoint of faculty members, demonstrate that the highest mean score (4.10) was related to the entrepreneurship-orientedness of the social environment of the school of health, whilst the lowest mean score (2.20) belonged to common perspective and prospective strategy in health.

**DISCUSSION**

One of the most important barriers to the initiation of entrepreneurial enterprises by students is that they are not equipped with entrepreneurial skills. It is a frequent phenomenon for entrepreneurial students to start a business activity, but that it subsequently faces difficulty. It is because the sustainability of an entrepreneurial enterprise requires

knowledge, attitude, and entrepreneurial skills that many health students have not acquired.

This research conducted a needs-assessment for designing an entrepreneurship-oriented curriculum based on high-level policies of the country. It also identified the educational needs of students in terms of knowledge and entrepreneurship skills commensurate with the comparative-inductive model. Prioritizing the educational needs of students showed that the first and foremost priority was entrepreneurship education and knowledge. This finding is consistent with those of Khaledi et al. (17). Therefore, entrepreneurial education and knowledge stand as a requirement for production, new services, and innovation. Hence, creativity and innovation is essential for students to shed new lights. In the post-industrial or information period, transformation has an extreme acceleration, and the importance of creative human resources is perceived more than any other era so that the society can build on innovation to reach creativity and entrepreneurship. Therefore, the inclusion of topics in the curriculum that can educate entrepreneurial knowledge and attitude is suggested for the health-associated curricula.

**Table 4. Prioritization of students' educational needs in health-associated disciplines with an entrepreneurial approach from faculty members' perspective based on mean scores**

Educational need	Importance mean score	Educational need	Importance mean score
Entrepreneurship-orientedness of the social environment of the health school	4.10	Correct and logical decision-making skill	3.15
Emphasis on practical trainings and health skills	4.05	The spirit of quitting conventional methods	3.12
Strengthening the teamwork spirit in health students	4.02	Self-esteem and confidence in students	3.11
Familiarity with the design and development of a business plan	3.95	The spirit to acknowledge changes and transformations	3.09
Entrepreneurial education and knowledge	3.94	Continuous interaction between students and the environment (agriculture, industry, etc.)	3.05
Entrepreneurship-orientedness of faculty' culture	3.87	Social accountability morale	3.04
Creating and improving the capacity to develop creative and personal ideas of students	3.86	Spirit of courage and integrity in health	3.02
Creating the atmosphere to support the innovative activities of health students	3.85	Creating and enhancing students' ability to complete tasks	3.01
Introducing economic resources in the field of health	3.84	Introducing healthcare businesses	3
Coherence of entrepreneurial activities in the field of health and forward-looking ability	3.75	Skill of designing virtual and electronic spaces	2.91
Creating and strengthening students' determination	3.74	Capital and investment of knowledge-based companies	2.85
Risk-taking spirit and power	3.65	Skill of designing an operational situation in health centers	2.84
Creativity and innovation in the field of health	3.62	E-commerce in the field of health	2.79
Entrepreneurship-orientedness of trainers (faculty members)	3.60	Skill of health students to analyze economic situations	2.76
Creating and improving students' capacity to accept success and failure	3.59	Identifying and creating entrepreneurial opportunities	2.65
Encouraging health students to acquire skills	3.58	Skill of resource collection and planning for healthcare businesses	2.62

Table 4. Continued			
Educational need	Importance mean score	Educational need	Importance mean score
Forward-looking attitude in health	3.52	Marketing and understanding the marketplace for health-associated businesses	2.58
Independence of health students	3.45	Providing and guaranteeing student's sense of accomplishment-seeking	2.56
Infusing and enhancing the spirit of hard work in students	3.42	Skill to create and develop opportunities in health	2.51
Creating and strengthening the ability to identify original business ideas in the field of health	3.36	Upgrading students' decision-making capacity	2.46
Creating and promoting the ability to turn talents into abilities and to enhance the capacity to envisage the future	3.35	Establishing and improving the ability to plan and organize healthcare business units	2.42
Improving students' capacity to do things without the need for others to help	3.28	Creating and enhancing the capacity to accept academic and professional outcomes	2.36
Creating and enhancing the spirit of accountability in solving problems with personal effort	3.25	Creating and improving the ability to control and monitor activities and affairs	2.21
Opportunity to address new enterprises in health	3.21	Common perspective and prospective strategy in health	2.30
Creating and improving the capacity of change in health students	3.20		

On the other hand, a curriculum should be based on participatory learning and group work so that it can activate students' imagination, thinking, and innovation. In this curriculum, the spirit of working hard must be strengthened in students. This finding is consistent with Hicks's (18) results. While most curricula in health-associated disciplines include the transfer of readily available information to students, learners are passive and the information flow is one-sided; thus, students' creativity is not activated and knowledge is not generated. Application of different teaching methods such as brainstorming and problem-solving will be effective in promoting creativity of students.

Also, prioritizing educational needs from the viewpoint of faculty members of the health school showed that their first priority was the entrepreneurship-orientedness of the social environment of the health school. To explain this, it can be said that students will be oriented towards entrepreneurship when the necessary cultural, educational, and social infrastructures are accessible in the students' school and educational setting. This finding is consistent with the results of Solomon (19).

Another finding, based on the faculty's view, indicated that *practical training and group work* should be included in the curriculum of health students. This finding is consistent with the results of Khaledi et al. (17). To explain this educational need, it can be said that engaging in entrepreneurial activities requires practical skills, and this will be operational if practical training and practical teaching is considered in the lesson plan of health students. On the other hand, it is necessary that group work be strengthened in the curriculum and that the culture of group work be taught to students.

Another educational need that both students and faculty members have identified as a priority was familiarity with designing and developing a business plan, which is consistent with the findings of Khaledi et al. (17) and Yamani

et al. (13). Therefore, one of the basic skills in entrepreneurship education is the development of a business plan. Designing a business plan is one of the most popular teaching methods (20). Honig (21) found that among 100 universities in the United States, 78 universities had a particular focus on business plans. In fact, designing a business plan can create a structure that helps students focus on a particular area of knowledge and provides them with the possibility of free thinking. The strength of this study is that the results obtained can be used to design the curricula of health sciences based on increased entrepreneurial power and student innovation.

Therefore, it can be stated that one of the most important missions and goals of medical universities and health schools is to promote the entrepreneurship power and to train creative and innovative forces. This has changed the school's mission over time, whereby these universities have been called the third generation universities or entrepreneur universities. Given the currently performed needs assessment, curriculum and medical education designers should consider the design and development of health-associated entrepreneurship-based curricula. Among the limitations of this research was the insufficient time of faculty members to complete the questionnaire, which was beyond the control of the researcher.

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