ENTREPRENEURIAL TOOLS TO IMPROVE MEDICAL SERVICES: VIEWS OF SENIOR HEALTHCARE MANAGERS AND ENTREPRENEURS IN ISRAEL

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ABSTRACT

Introduction: Internationally, healthcare systems around the world are complex, expensive, and often unable to deliver optimal services to their country's residents. The COVID-19 pandemic revealed and exacerbated these weaknesses. There is evidence that widespread adoption of entrepreneurial tools such as approaches, software, apps, and platforms to deliver healthcare services can improve medical care by reducing costs and increasing effectiveness. Despite the use of entrepreneurial tools in other economic sectors, Israel's healthcare system has not embraced them widely. This study aimed to examine the attitudes of senior healthcare managers and entrepreneurs concerning the implementation of entrepreneurial tools in order to assess reasons for the slow uptake of such tools in the Israeli healthcare system and to suggest possible solutions.

Methods: In this qualitative study, 18 semi-structured interviews were conducted with 10 entrepreneurs and 8 senior healthcare managers who represent the controlling organizations within the system.

Results: Five key factors which influence the use of entrepreneurial tools in the Israeli healthcare system were identified: unfamiliarity with entrepreneurship tools; conservatism or a lack of openness; the importance of entrepreneur and innovation centers; lack of system controls and mechanisms for tracking and encouraging integration; and conflicting views on budget.

Limitations: Limitations of this study include small sample size and limited literature on the topic, which both impaired the ability to make comparisons.

Conclusions and Implications: This study suggests that in order to improve the uptake of entrepreneurial tools, healthcare system players may study entrepreneurial tools, establish appropriate entrepreneurship and innovation centers and other infrastructures, and focus on low-budget opportunities.

INTRODUCTION

The research on entrepreneurship is extensive, and the word entrepreneurship has multiple definitions across a multitude of studies (Rauch & Frese, 2000). The history of entrepreneurship as a discipline began in the mid-18th century (Cantillon, 1755) and focused on individual characteristics (Say, 1803). In the mid-20th century, entrepreneurship was still seen solely as an outcome of individual personality characteristics (Schumpeter, 1934), later researchers focused on environmental and cultural contexts, which can either encourage or inhibit entrepreneurship (Shapero & Sokol, 1982).

This research showed that entrepreneurs are not born with certain psychological and socio-demographic characteristics that lead them to success (Hatten & Coulter, 1997), and entrepreneurs and non-entrepreneurs do not differ in their character traits. To sum up, early literature focused on understanding who entrepreneurs are, examining personality characteristics as well as environmental and cultural contexts. The focus shifted to an understanding of why entrepreneurs do what they do.

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Such research also examined the entrepreneur's ability to identify opportunity and highlighted entrepreneurs' pursuit of opportunities regardless of current resources (Stevenson & Jarillo, 2007),

Since the end of the twentieth century, researchers have returned to the question of individual characteristics (Begley & Boyd, 1987) and have focused on specific entrepreneurial behavior (Drucker, 1985) and/or unique cognitive models used by the entrepreneur, with some researchers considering these innate and others suggesting they can be learned (Neck & Greene, 2011). Some researchers are attempting to develop empirical models (Smart & Conant, 1994) and see entrepreneurship as a process (Davidsson, 2005); others are considering the organizational dimensions of entrepreneurship (Covin & Slevin, 1991).

Many countries around the world try to foster entrepreneurship; it is less clear what policies and practices contribute to or inhibit the integration of entrepreneurship in specific organizations or systems Evans, M. (2003). We suggest that because entrepreneurship has been shown to be clearly linked to entrepreneurial culture, entrepreneurship policies should be specific to the relevant field, such as healthcare. This view is supported by literature that suggests that organizational infrastructures are necessary to encourage entrepreneurship and its resulting innovations. In fact, the literature specifically recommends establishing innovation centers in healthcare systems that include senior executives and clinical staff using reliable information and infrastructure (Bradley et al., 2004).

The literature suggests multiple roads to entrepreneurship integration with many variables and actors from within and outside the system (Fitzgerald et al., 2002). One model puts the concerns and implications of entrepreneurship on the employee, the employee group, and the organization (Anderson, 2004), and suggests that the organization's employees are a barrier to entrepreneurship (Phillips & Garman, 2006).

Despite the variety of definitions of and approaches to the study of entrepreneurship, there is widespread agreement on some of the specific tools that have advanced entrepreneurship in other industries. To facilitate an understanding of exactly which approaches may benefit healthcare service delivery, Table 1 provides a wide array of entrepreneurship tools to include different types of tools, models, and methods. It is derived from the literature and includes tools suggested in the interviews with entrepreneurs familiar with the healthcare system.

The Israeli healthcare system has integrated entrepreneurial tools and approaches to the delivery of care. These include state-of-the-art electronic health records that are mined for prevention opportunities. Seen in the context of the larger Israeli economy, however, the healthcare sector's record of integrating entrepreneurial tools and approaches is complex and surprisingly limited. This is surprising because, since its establishment, the State of Israel has evolved as a center of entrepreneurship and innovation in other sectors (Senor & Singer, 2009). One of Israel's significant growth engines has been entrepreneurship and innovation, and the country is considered a world leader in entrepreneurship. Israel has about 8,000 high-tech companies and 5,000 diverse start-ups, and every year this number grows by about 500 new start-ups - temporary organizations looking for a business model that will grow exponentially over time. Israel ranks 15th among the 133 economies featured in the GII 2024. The Global Innovation Index (GII) ranks world economies according to their innovation capabilities. (WIPO, 2024) (Shane, S., & Venkataraman, S. (2000). Over a decade ago it already ranked third in the absolute number of companies traded on NASDAQ, after the US and China (Akin, 2010). Israel is considered a breakthrough state in many areas: communications and Internet, medical technology, agriculture practices and water desalination, digital printing, automotive industries, and

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security industries and more. Today, the State of Israel ranks first in the world in terms of venture capital investment as a proportion of gross domestic product. In 2021, Israeli high-tech companies raised a record $25.6 billion from venture capital investors and other investors (IVC-Meitar, 2021). Israel invests about 4.94 percent of its gross domestic product in research and development (Applebaum, 2021). This has resulted in acquisitions and IPOs by Israeli startups of about $187 billion just in the last decade (Weizenbluth, 2024).

While Israelis are leaders in global entrepreneurship and innovation, measured by multiple parameters, the Israeli health system has major challenges. Given the success of entrepreneurship and its resulting innovation in reducing costs and improving the safety and quality of numerous products and technologies, better integration of entrepreneurship in the healthcare system has the potential to make Israel a global leader in this industry as well. Considering the limited prior research, we conducted semi-structured interviews with managers and entrepreneurs in the field of healthcare to evaluate their attitudes toward entrepreneurship tools in the healthcare system.

Table 1
ENTREPRENEURSHIP TOOLS

Type	Samples
Planning and Executing Tools	Business Plan, Canvas Business Model, Rapid Results Approach, Agile Software Development, Pilot, Pivot Demo, Mockup
Data Collection Tools	Coworking Space / Hub, Mentoring, Entrepreneurship Courses, Pitch Workshop.
Finance Tools	FFF Funding (Family, Friends, Fools), Crowdsourcing, Business Angels, Startup Accelerators, Technology Transfer Companies, Business Incubators, Venture Capital, R&D Centers, Multinational Corporations, Bootstrapping, The Innovation Authority
Cognitive Tools	Effectual Logic, Entrepreneurial bricolage, Discovery – Driven Planning, Disciplined Entrepreneurship, Evidence-based Management (EBM) for Entrepreneurial Environments, Theory of Inventive Problem Solving TRIZ / TIPS, Prescriptive Entrepreneurship, Customer Development, The Lean Startup Methodology, Design thinking
Legal Tools	Founders' agreement, Term Sheet, Patents
Source: Literature review and authors' analysis of study data August 2018–March 2019	

METHODS

Sample description and recruitment

The research team conducted 18 semi-structured interviews with senior managers in the Israeli health care system and entrepreneurs in the period from August 2018 to March 2019.

The interviews focused on attitudes to entrepreneurship tools in the health care system. Senior managers were chosen specifically because policies and decisions about adoption of new ventures are in their hands. This is because the healthcare system in Israel is very centralized and controlled by a few very powerful players – Ministry of Health (MOH), the Ministry of Finance (MOF), and the four health service organizations. This organization means entrepreneurs who enter the system must do so via senior healthcare managers, and there are few opportunities to advance entrepreneurial approaches and processes without receiving support from senior healthcare managers. Interviewees, selected by

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purposive sampling, included 8 senior healthcare managers representing the MOH, MOF, each of the four health funds, hospitals and the military, and 10 entrepreneurs (Table 2).

An experienced entrepreneur with both health-system and business experience conducted the 18 interviews. The experience of the senior managers is extensive and encompasses the Ministry of Health, hospitals, the four Health Maintenance Organizations (HMO), and the Israeli Defense Forces (IDF). Two of the senior officials served as directors general of the Ministry of Health (MOH), two served as deputy directors general of the MOH, and five served as additional senior officials in the MOH. Two of the executives managed Health Maintenance Organizations, two served as district managers, and three served in senior positions in the HMOs. Five of the senior managers have run a total of seven different hospitals over the years, and another served as a hospital deputy director. One senior manager served as Chief Medical Officer, one served as Deputy Chief of Staff, four served in senior positions in the IDF Medical Corps. In terms of education, five specialize in family medicine and pediatrics, four studied medicine as soldier-students, and all have at least one additional degree, including two with Master's degrees, and one with an additional doctorate. Five of them completed another degree at the world's top universities. Today, five of them have a professorship at various academic institutions.

Four of the entrepreneurs come from the disciplines of health sciences, three of them are physicians (one of them also has a doctorate in health systems management) and another entrepreneur has studied physical therapy and health systems management. Four of the entrepreneurs who initiated the healthcare system were involved in running a fund, incubator or innovation center related to investments in health sciences.

In terms of the education of the entrepreneurs who initiated startups in the health system, six have a doctorate and two of them have a double doctorate.

Table 2
DESCRIPTIVE CHARACTERISTICS OF INTERVIEWEES IN THE STUDY

Characteristics of Senior Healthcare System Managers	**Number**	**Percent**
Total	8	100
Role		
Ministry of Health (MOH) CEO	3	37.5
Ministry of Health (MOH) Deputy CEO	2	25
Ministry of Health (MOH) Senior Manager	4	50
Health Maintenance Organizations (HMO) CEO	2	25
Health Maintenance Organizations (HMO) Regional Manager	2	25
Health Maintenance Organizations (HMO) Senior Manager	3	37.5
Hospital CEO	7	87.5
Hospital Deputy CEO	2	25
Hospital senior manager	2	25
Chief Medical Officer	1	12.5
Deputy Chief Medical Officer	1	12.5
Senior Positions in the IDF Medical Corps.	5	62.5
Professor	5	62.5
M.D.	8	100
Ph.D.	s1	12.5
Characteristics of Entrepreneurs	**Number**	**Percent**

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Total	10	100
Role		
Startup Founders	10	100
Founder of Acquired Startup (Exit or IPO)	4	40
Hospital Deputy CEO	2	20
Running a Fund or Incubator or Innovation Center	4	40
M.D.	3	30
Ph.D.	3	30
Source: Authors' analysis of study data August 2018–March 2019. NOTE The percentages do not add up to 100 because of rounding.		

Interviews

The research model began with literature review of entrepreneurship and entrepreneurship tools. The literature review then informed interviews with entrepreneurs about entrepreneurship in the healthcare system, which then were used to validate the relevance of the interviews that were finally conducted with senior healthcare managers.

We began the interviews by defining the purpose of the study: "to attitudes of senior healthcare managers toward enabling entrepreneurial tools to improve medical care in Israel." Interviewers were first asked to describe themselves and their entrepreneurial experience. A set of open-ended questions were asked that queried interviewees about their personal experiences, in three broad categories: the Definition of Entrepreneurship Tools, Barriers to Increasing the Integration of Entrepreneurship tools, and Resources for Increasing the Integration of Entrepreneurship Tools. Investigators encouraged participants to describe their approach to Entrepreneurship Tools including asking what constitutes an entrepreneurial approach or tool in health care? Interviews lasted thirty to ninety minutes. Each interview was digitally recorded.

Qualitative Analysis

Interview audiotapes were transcribed. An experienced entrepreneur with both health-system and business experience, therefore proficient in the various entrepreneurial tools, coded each transcript. Coding reports were discussed using a consensus-based approach to identify major themes. Common themes were identified by ongoing review, and through researchers discussions during meetings. The researchers are people from diverse backgrounds, which promoted in-depth discussions and understanding of the data.

STUDY RESULTS

Our qualitative analysis focused on the Definition of Entrepreneurship Tools, the Barriers to Increasing the Integration of Entrepreneurship tools and the Resources for Increasing the Integration of Entrepreneurship Tools. We identified five key factors that may influence the use of entrepreneurial tools to improve medical care: unfamiliarity with entrepreneurship tools; conservatism and lack of openness and collaboration; the importance of entrepreneur and innovation centers; lack of control in the system and no mechanisms for tracking and encouraging integration; and conflicting views on budget. Table 3 outlines the factors addressed in our interviews, along with representative quotations. Below, we provide examples of each factor and discuss potential improvements.

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Definition of Entrepreneurship Tools

Unfamiliarity with Entrepreneurial Tools. The large majority of senior healthcare managers and half of the entrepreneurs were unfamiliar with entrepreneurship tools. For example, one manager stated, "I do not know what an entrepreneurial tool is." Most senior executives and entrepreneurs consider the character traits of the entrepreneur an entrepreneurial tool. For example, a manager described, "I think the best entrepreneurial tool is creative thinking, and I do not know a better tool than that." As noted above, this assessment links entrepreneurial outcomes with the specific character traits of the entrepreneur as a person. Although there is still a great variety of approaches to understanding entrepreneurship, this view suggests that most senior healthcare managers consider entrepreneurship to be an outcome of a variable beyond their control. Even entrepreneurs showed this unfamiliarity. One stated, "I do not know all these terms of 'entrepreneurship tools.'" Also, about a third of senior managers mentioned the importance of entrepreneurial education as an important resource. Some senior healthcare managers shared their conviction that entrepreneurship tools can be taught. One manager explained

I think it should start with a medical school, I did not have ... So today there are courses for students who are already teaching them the subject of entrepreneurship ... So already within medical education it should be. ... Encourage it to teach this, I mean in executive programs, in the training of managers at all levels of management from department heads through hospital administrations ... the whole issue of teaching key people within the system, it is essential that people have these tools.

Barriers

Conservatism and a Lack of Openness. A large majority of senior healthcare managers and most entrepreneurs regard conservatism and lack of openness as the most significant barriers to integrating entrepreneurship tools in health care. One manager explained, "And here you have a double problem, one is the love of people for what was. And two worlds that keep themselves in full force. … the system is conservative." One manager offered a barrier explanation: "Look, one challenge that is true in almost every system is the sharing challenge. Breaking the boundaries, the boundaries of the resistance of the people." Most of the senior healthcare managers and some of the entrepreneurs familiar with the healthcare system cited the burden and complexity of integrating entrepreneurship tools into the healthcare system as a significant challenge. A minority of senior healthcare managers believe that there are professional capabilities in the healthcare system for encouraging entrepreneurship. Some healthcare executives and a large majority of healthcare entrepreneurs believe that the health care professionals' perceptions are conservative and not openminded.

Resources Needed

Establishing Centers to Promote Entrepreneurship and Innovation. When asked about the potential value of establishing centers to promote entrepreneurship and innovation, all agreed that they would be important resources. One manager stated from his experience, "I think first it is necessary. And secondly, that it will have a very good effect. [I] can give the examples from us: We have a research and innovation institute that pushes the subject; we have an incubator that pushes the subject. And I know it also exists in other healthcare organizations in several forms, I have no doubt that you need this thing to encourage innovation and entrepreneurship in the organization." One manager shared

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his view about the operation of those centers: "I think I would give innovation centers ... I'll tell you what I would like ... I would set up innovation centers per theme. ... Why? Because I think that in the end there are all kinds of things you can do, and they are very simple .... By the way, I am a big believer in the client, and I think the whole view should be different, and the priorities are different by the way." This factor is connected to the fact that a large majority of senior executives and some of the entrepreneurs cited openness and collaboration as the primary resource needed to increase integration of entrepreneurship and the fact that half of the senior officials thought implementation was the significant challenge. This factor is also connected to the finding that half of the senior executives believe that a deep understanding of the field is an entrepreneurial tool, followed by familiarity with the healthcare system, staff diversity and experience, such as developing and launching pilot programs.

No Mechanisms for Tracking and Encouraging Integration. Most respondents in the study, managers and entrepreneurs, believe there are no controls in the system and no mechanisms for tracking and encouraging the integration of entrepreneurial tools in the healthcare system. One manager stated, "there are initiatives, there are innovative ideas, there are things that even win awards, but there is no next step to say to everyone, tomorrow everyone behaves like that. Too bad for this treasure, on the contrary, one gets a certificate and the next day we try to invent the wheel again in another place. So, I do not know today of any mechanism, certainly not cross-organizational."

One attending manager explained a main barrier for these mechanisms, "but again, you run into this dilemma of whether people would want to share information at all... probably not." This factor is connected to the fact that half of the healthcare system senior managers and entrepreneurs see the use of entrepreneurship tools in the healthcare system as the biggest advantage of initiating change and improving the system.

Conflicting Views on Budget. Only half of the senior healthcare managers and a minority of entrepreneurs viewed the budget as an important barrier to integrating entrepreneurial tools. One manager stated, "And of course with the solutions, they also need resources." Most senior healthcare managers and some of the entrepreneurs familiar with the healthcare system believe that budgets are a resource needed to incorporate entrepreneurship. One explained, "As with anything, money is a key resource, that is, a means to do it." On the other hand, some senior officials believe that the budget is not the required resource as one stated, "the solutions I personally dealt with, almost everyone did not need money, on the contrary. Assume that money will not be accepted ... and yet you do have to give the solution and you have to think in an unconventional way." Another explained, "I think a large part of our problems should be solved in this area and not necessarily by solutions of more money and more, because it will never be ... but we already know [how] to utilize our knowledge, our abilities." This factor is connected to the finding that some senior executives believe the main disadvantage is investment of resources without success.

DISCUSSION

Developing a better way to adapt entrepreneurship tools in the healthcare system by managers has the potential to improve the system outcomes dramatically. Our study identified five factors that can be critical to successful adaption: unfamiliarity with entrepreneurship tools, conservatism and lack of openness, the importance of entrepreneur and innovation centers, lack of controls in the system and lack of mechanisms for tracking and encouraging the integration, and conflicting views on budget. In a large majority of interviews, the interviewees describe all five factors.

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Education

The basic finding in our research is that there are wide gaps in familiarity with entrepreneurship, including its definition, and the use and benefits of integrating entrepreneurship tools. Although, as noted above, the literature on the link between attitudes and entrepreneurial outcomes is inconclusive (Rye & Kimberly, 2007). Most healthcare managers defined the problem of uptake as emerging from those factors: conservatism, a lack of open-mindedness, and the complexity and burden of healthcare service delivery. Together, these represent significant barriers to the increased integration of entrepreneurship tools in this sector. Although there is still a great variety of approaches to understanding entrepreneurship, this view suggests that most senior healthcare managers consider entrepreneurship to be the outcome of a variable beyond their control. These senior executives and entrepreneurs do not recognize entrepreneurship tools, and they seem to still believe entrepreneurship is a product of an entrepreneurial nature.

Literature has previously focused on the character traits of entrepreneurs in trying to understand their work (Begley & Boyd, 1987). Research has moved from inherent entrepreneurial character traits to approaches that focus on entrepreneurial actions (Smart & Conant, 1994). Based on our findings, we recommend providing education about entrepreneurship tools in the healthcare system and creating a common language between entrepreneurs familiar with entrepreneurial opportunities in the healthcare system and senior healthcare managers. Significant education on entrepreneurial tools is required to use these entrepreneurial and innovation generators in the healthcare system, with a spotlight on cognitive entrepreneurship tools. Entrepreneurship and innovation should be taught in general and with an emphasis on entrepreneurship tools in the health system in particular, first in healthcare system management frameworks and later in medical schools. Encouraging entrepreneurship will require a breakthrough on the part of the entrepreneur, the senior managers in the healthcare system, and it will cause a major change in the medical world. The study of entrepreneurial tools will also improve openness and reduce conservatism working against entrepreneurship and innovation in the health care system Spurgeon, P., Mazelan, P. M., & Barwell, F. (2011).

Entrepreneurial education has been widely discussed in the literature on entrepreneurship, and it is believed that entrepreneurship can be taught (Gorman et al., 1997).The literature describes a situation where there is no legality in entrepreneurship integration, which depends on many variables and actors from within and outside the system Fitzgerald et al., 2002). In the literature, a model was also presented that puts the concerns and implications of entrepreneurship on the employee, the employee group, and the organization (Anderson et al., 2004), and suggests that the organization's employees are a barrier to entrepreneurship (Phillips & Garman, 2006). Half of the healthcare system senior managers and entrepreneurs see the use of entrepreneurship tools in the healthcare system as the biggest advantage of initiating change and improving the system. This is also mentioned in the literature on entrepreneurship research in various organizations. All those findings in our study connect to education (Wood, V. R., & Howell, R. (1991).

Establish Entrepreneurship and Innovation Centers

According to our study, establishing appropriate entrepreneurship and innovation centers may encourage entrepreneurship in the health system. This entrepreneurship tool can be expressed in many ways and can be low budget. It should meet the requirements of the entrepreneurs familiar with the healthcare system and senior healthcare managers: embrace openness to entrepreneurship and strive for change, enable wide collaboration, and develop entrepreneurship in an orderly and effective manner. Such infrastructure should help entrepreneurs implement their entrepreneurial tools, including providing guidance and removing barriers. Investing in establishing entrepreneurial centers in the

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healthcare system will help the hundreds of new entrepreneurs who approach the healthcare system every year. Moreover, the centers will give the entrepreneurs more entrepreneurial tools. The literature suggests that infrastructure for entrepreneurship and innovation should be encouraged (Williams, 2011) and recommends establishing innovation centers that include senior executives and clinical staff using reliable information and infrastructure (Bradley et al., 2004). The last is connected to the next subject as well.

Establish Knowledge Exchange Mechanisms

Our study finds no mechanisms for tracking and encouraging entrepreneurship tools. The various bodies in the healthcare system focus on outstanding innovation and entrepreneurship rather than replicating existing successes. There is a lack of regular processes for adopting entrepreneurship in the healthcare system. Nowadays things are incidental and dependent on circumstances. The entrepreneurship is a key factor that needs to be recognized in order to increase a venture's chances of progressing in the healthcare system. However, the healthcare system itself also needs to understand entrepreneurship tools in order to systematically and effectively embrace entrepreneurship. The study indicates that there are no control mechanisms for entrepreneurship and innovation in the healthcare system, and there is asymmetry of information on this topic.

We recommend establishing an inclusive body that will: (a) review the various initiatives in the healthcare system and replicate successes for the benefit of the whole system; (b) promote a broad look at entrepreneurship and innovation and not encourage the pursuit of innovation fame; (c) share both successes and failures as learning opportunities with the healthcare system units about ventures and embrace initiatives already successful elsewhere in the healthcare system. Unlike other systems, the success of one body in the healthcare system to provide better medical service may be of benefit beyond an individual unit.

Conflicting Views on Budget

The interviewees had different views concerning budgeting. On one hand, some believed a budget was required, but on the other hand, some felt that a budget is not mandatory for promoting entrepreneurship and innovation. There are many low-budget opportunities for increasing entrepreneurship and innovation. Learning and promoting entrepreneurial tools with emphasis on lean models should be encouraged regardless of the budget, as budgets are usually absent. Entrepreneurship can save the healthcare system from its enormous expenses with the help of new business models (Hwang & Christensen, 2008). Finally, a number of directions for future research may be particularly useful. First, a better understanding of how entrepreneurial tools can not only improve specific medical services, but benefit the system as whole, would help improve the education of healthcare managers and, ultimately, may benefit patients. In addition, given the healthcare system's responsiveness to consumer and patient preferences and choices, a better understanding of the attitudes to the use of entrepreneurship approaches and tools among different population groups would be beneficial.

Table 3
THEMATIC ANALYSIS OF FACTORS INFLUENCING ENABLING ENTREPRENEURIAL TOOLS TO IMPROVE MEDICAL CARE

Factor	Sample Quotes
Unfamiliarity with Entrepreneurship Tools	"We started with the fact that I do not quite understand what an entrepreneurial tool is, so I cannot say beyond that." (Senior manager) "I must point out that theoretically I do not know entrepreneurial tools." (Entrepreneur)

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Conservatism and Lack of Openness	"But it is a phenomenon that exists strongly in the country, 'Not Invented Here,' this thing is a very, very big barrier, there is no openness, two, ... that all systems will look to the future and not to the past, ... to know that the world is changing, the population is changing, and I have to find other solutions and not yesterday's solutions, cooperation ..." (Senior manager) "There is a natural resistance to what is called 'not invented here.' I think there is naturally some kind of natural resistance ... a desire to get ideas from outside is the most missing tool. " (Entrepreneur)
Establishing Centers to Promote Entrepreneurship and Innovation	"I think they must. I think the whole system in all its avenues from the Ministry of Health through the MHO and other components in the system, should have research bodies and entrepreneurial bodies." (Senior manager) "I think it has to be. It has to be, it has to be set up. It has to be budgeted for. Everybody will launch it and budget it, and it will have so-called scouts inside who will go and look and encourage entrepreneurship, they will benefit. They will be the first to benefit from it." (Entrepreneur)
No Mechanisms for Tracking and Encouraging Integration	"I do not know more than, you know, the existing mechanisms. In the end there are managers who ... your manager checking you or something like that. But there are no orderly control mechanisms about the encouraging of entrepreneurship. We do not necessarily learn from failures; we do not necessarily learn from successes. I think we are very far from this matter of controlling and thinking about how we can do it better." (Senior manager) "Almost certainly not. I do not know. I think there is no lesson learning process that is in any way based on inquiries or research that has been done, on why the last 50 start-ups we brought to the system have not succeeded. Today we deal a lot and too much in the 'lone fish and less with the fishing rod.' ..., but there are no such processes, learning processes, processes of drawing conclusions, there are no processes of building an orderly infrastructure." (Entrepreneur)
Conflicting Views on Budget	"First of all, conceptually, first of all resources that do not cost money, ... and then you also have to back it up as much as necessary with economic means that will not bite on a regular basis [and] disable it… For example, I gave an option for a beta site for a system, ... I built an agreement with the developers, ... I said that as soon as it works then they promise to provide [it to] me for free, for so-and-so years." (Senior manager) "Money is small." (Entrepreneur)
Source: Authors' analysis of qualitative interviews with senior healthcare managers and entrepreneurs from August 2018 to March 2019	

Limitations

Our study had a couple of limitations. First, the research sample was small. The study included a small number of entrepreneurs familiar with the healthcare system and senior health managers from a limited number of entities. This may impede generalization of its findings to other entrepreneurs and healthcare system executives. Second, the literature on attitudes to the adoption and integration of entrepreneurship tools in healthcare organization is limited, thus hampering our ability to compare findings to those of other studies.

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CONCLUSION

As policy makers, providers and managers looking to improve the healthcare system, it would be wise to focus on encouraging widespread adoption of entrepreneurial tools and approaches. Based on the experience of other industries, those tools have the potential to be a game changer in improving the healthcare system as a whole.

Although the topic of entrepreneurship and innovation has been widely studied in recent decades, the topic of entrepreneurial tools has scarcely been explored. The key factors for successful adoption have been poorly understood and focused on entrepreneurial traits. Our findings highlight five factors related to the process of the adoption of the entrepreneurial tools: unfamiliarity with entrepreneurship tools, conservatism and lack of openness, the importance of entrepreneur and innovation centers, no controls in the system and no mechanisms for tracking and encouraging integration, and conflicting views on budget.

Despite multiple opportunities to spread low-budget entrepreneurial tools, it must be noted that some of the healthcare system's huge budget must be invested in places where change in perception and significant savings can be made. Current conditions are suited to a study of entrepreneurial tools, establishing appropriate entrepreneurship and innovation centers and other infrastructure, and recruiting an inclusive body that will review the various initiatives in the healthcare system and focus on the many low-budget opportunities for increasing entrepreneurship and innovation.

Investment in those solutions to improve adaption of entrepreneurial tools should be emphasized across key stakeholders, such as health systems, providers, managers, and policy makers. Sticking to the same economic and service delivery paradigms is not a viable option.

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