Interpretation of the nexus between the entrepreneurs and entrepreneurial business opportunities in the healthcare context: a phenomenological study

Rosa Mehrabi*, Jahangir Yadollahi Farsi and Kambiz Talebi

Faculty of Entrepreneurship, University of Tehran, 16 St., North Kargar Ave., Tehran, Iran
Email: r_mehrabi@ut.ac.ir
Email: jfarsi@ut.ac.ir
Email: ktalebi@ut.ac.ir
*Corresponding author

Abstract: Since few studies focused exclusively on the entrepreneurship, the entrepreneurial agents and their interaction with the business opportunities in the healthcare area, the purpose of this paper is to interpret the intersubjective nature of the interplay between the entrepreneurs and entrepreneurial business opportunities in the context of healthcare entrepreneurship. The paper’s methodology is qualitative hermeneutic phenomenology. The samples of sixteen entrepreneurs in the pharmaceutical, medical biotechnology, medical devices and m-health areas of Iran were interviewed using semi-structured questions. Based on the interpretive phenomenological analysis approach, this study explores how healthcare entrepreneurs make sense of their business opportunities. The findings indicated seven spheres of the entrepreneurs’ context-based insights, the entrepreneurs’ context-based projections, the entrepreneurs’ dispositional attributions, the external facilities in macro levels, the external facilities in micro levels, the entrepreneur’s environmentally oriented actions and the entrepreneur’s presupposition-oriented actions as the nature of the entrepreneurship nexus.

Keywords: entrepreneur; entrepreneurial opportunity; entrepreneurship nexus; healthcare entrepreneurship; context; hermeneutic phenomenology; interpretation; entrepreneurship; small business.


Biographical notes: Rosa Mehrabi is a PhD candidate in Entrepreneurship at the University of Tehran, Iran. She is the Director of Strategic Development in a private venture capital fund in Iran. She is the co-author of two textbooks on entrepreneurship decision-making and entrepreneurial idea and opportunity for Iranian students. She also teaches business model creation course to the undergraduates and post-graduates students. She published papers in international peer-reviewed journals on topics such as the entrepreneurial decision-making, the entrepreneurial marketing and the nature of the entrepreneurial opportunity. Her current research focuses on the business opportunity development, the role of entrepreneurship in the healthcare sector and venture capital studies.

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1 Introduction

Healthcare entrepreneurship has advanced during the last years, as illustrated by the number of venture funding deal, which raised around 200% between 2010–2014 and has continued to increase by the year 2015 (Lorenzetti, 2015). These prosperous are driven by the synergy between the social, political and technological forces, the financial incentives and the professional healthcare entrepreneurs who adopt knowledge and technology into the healthcare areas (Grazier and Metzler, 2006). These efforts bring about the new business opportunities into the healthcare market economy (Pareras, 2011). Thus the healthcare entrepreneurship has flourished especially in the medical biotechnology, pharmaceuticals and medical devices and has led to deliver products or processes that improve the quality standards of healthcare and lifestyle within and across communities (Grazier and Metzler, 2006).

During recent decades there has been an on-going debate in developing country regarding the healthcare industry as a leverage for national and international development. The healthcare industry is currently among those thriving areas of entrepreneurship in Iran as a developing economy (CFIHS, 2016). While in 2006, about 45% of the Iranian government’s budget came from oil and natural gas revenues, in 2010, the economic reform plan was approved to move towards free market prices. Meanwhile, in 2014 applying the healthcare transformation plan in Iran diversified Iran’s oil-reliant economy into the nanotechnology, biotechnology and pharmaceutical industry (CFIHS, 2016). In this regard, the Iran pharmaceutical market value raised in $34.2 billion in 2015 with massive growth potential going into the future. The $675 million of this volume is dedicated to the biopharmaceutical and 27th sample out of 160th biosimilar products available in the world are now producing and exporting through 11 entrepreneurial companies of Iran pharmaceutical industry. In addition, the market value of medical and laboratory devices of Iran was $1.7 billion in 2016 and there are 313 active entrepreneurial producers in this market (Vatanpour et al., 2016). These statistics indicate the thriving of healthcare entrepreneurship in Iran.
From the academic perspective, the entrepreneurship is predominantly described as a process involves the nexus of two phenomena: ‘the presence of lucrative opportunities and the presence of enterprising individuals’ (Shane and Venkataraman, 2000). This framework has directed the scholarly domain of entrepreneurship by the way of focusing on the interplay between entrepreneurial opportunities and the individuals who discover, conceive, create or pursue those opportunities (Davidsson, 2015, 2016). Accordingly, to understand entrepreneurial processes researchers should study the individual-opportunity nexus and their fit (Dimov, 2007; Gartner et al., 2016; Wood and McKinley, 2010). However, as stated by Davidsson (2015), there has been made slight conceptual and empirical advancement on the description of significant characteristics of opportunity and its interaction with characteristics of the entrepreneurial agent.

In this regard, the review of academic literature in healthcare indicated that few studies focused exclusively on the entrepreneurship nexus in the healthcare area. Mainly, the existence of business opportunities which are highly reliant upon the entrepreneurial agents (Korsgaard, 2013) has been neglected in this field. Most of the significant research in the healthcare entrepreneurship has been carried out with concentration on individual entrepreneur’s perspective on the public healthcare services, clinical practice or institutional environment (Conn et al., 2010; Exton, 2008, 2010; Sinisammal et al., 2016), leaving ample room for studies pertain to the professional entrepreneurs interpretations toward their business opportunities (Dimov, 2011; Hansen et al., 2016).

Our research fills this gap in the literature by interpreting the substantive nature of entrepreneurship nexus idea in the healthcare context on the basis of the intersubjective meanings comes from the articulation of the entrepreneurs about their interaction to shaping the nature of their surrounding business environment (Seymour, 2006). Such an interpretation achieves by applying qualitative contextualise methodology of the hermeneutical phenomenology (Friederike and Gartner, 2016). Hermeneutical interpretation simultaneously entails the experiences of entrepreneurs in earning their livelihood, along with their interaction with the environment (Dimov, 2011) and the pre-existence and actor independence nature of opportunity which is embedded in the economic, historical and sociocultural context of the world (Berglund, 2015). This view puts our investigation in the methodological interactionism paradigm that offered by Friederike and Gartner (2016) for outlining the premises under which the nexus idea of entrepreneurship is the focus of scholarly attention. Our hermeneutical interpretation fills the existing theoretical gap in terms of avoidance the trap of evolutionary realism perspective on entrepreneurship that results from building explanation entirely upon entrepreneurs own opinions of material things (Seymour, 2006). More importantly, we believe that our study replies to the shortcoming in neglecting the importance of entrepreneurial nexus as the main factor in promoting entrepreneurship and business development in healthcare area that can help entrepreneurs, leaders and agencies in developing countries to pave the way in flourishing the healthcare entrepreneurial business creation.

For this phenomenological study, the identified research questions are:

Q1 How do healthcare entrepreneurs perceive and give meaning to their business opportunity over time within a world of work and others?

Q2 What are the fore-structures of their understanding about the entrepreneurial opportunity?
Q3 What are the certain aspects of the world that surround the opportunities in the healthcare context?

Q4 What are the empirical livelihood activities of entrepreneurs during their business creation?

2 Theoretical framework

2.1 The entrepreneur

The question of how individuals contribute to the economy has long been a central topic in the entrepreneurship (Gartner et al., 2017). In the early theory of entrepreneurship, Knight (1921) indicated the main function of the entrepreneur as to carry out tasks of initiating valuable business opportunities, assuming the uncertainty and adapting to the changes in the economy and exercising judgment over these unique situations to create a company and to earn a positive profit.

Likewise, in the main theory of entrepreneurship Schumpeter (1947), presented the most prominent idea on entrepreneurs as an innovator who carries out the creation of either a new good, quality, method of production, market, organisation-industry or the capture of a new source of supply. Later, in the modern approach to entrepreneurship Kirzner (1973) introduced the alert entrepreneur as someone who discovers profit opportunities and seizes the resources to exploit them. The Kirzner alert entrepreneur is able to spontaneously encounter the ‘knowledge of where to find market data’ (p.67) and discover the economic facts that have previously been neglected by all other market participants.

The resemblance of these three main theories of entrepreneurship is that in all cases entrepreneur has been elaborated as someone who acquires and evaluates resources and directs actions in order to exploit an opportunity to introduce something new and to create value to the market economy (Lewin, 2015). In principle, the variation in these conceptualisations is owing to whether the entrepreneur creates, discovers or judges the opportunity. Consequently, it leads researchers to differentiate entrepreneurs from other members of society and investigate the way they confront and interconnect to the entrepreneurial opportunities.

2.2 The nature of entrepreneurial opportunity

Reviewing the theoretical foundation indicated that significant progress has been made in the last few decades about the theoretical construction of entrepreneurial opportunity (Companies and McMullen, 2007). However, the field of entrepreneurship has faced a disagreement over the ‘nature of the entrepreneurial opportunity’ (Hansen et al., 2016). Generally, there have been two different philosophical approaches to the ontology of this construct.

The first is the realist position which assumes the entrepreneurial opportunity as the reality formed by exogenous shocks to the pre-existing environment, waiting to be discovered by the alert individuals (Shane and Venkataraman, 2000). The second is the
subjective position which assumes it as the social construction which is endogenously enacted by the perceptions, imaginations, sense-making and creative deeds of the entrepreneurs (Gartner et al., 2016). Both alternatives approve the importance of entrepreneurial opportunity in entrepreneurship and both have provided considerable knowledge about the nature of the concept. We depicted some major conceptualisation in each tradition across the literature in Table 1.

2.3 The entrepreneurship nexus

While much of past entrepreneurship research focused on the entrepreneurs and indicated their psychological and behavioural characteristics, the recent research puts the interconnection of the entrepreneurs and opportunities at the heart of their investigations (Davidsson, 2016; Korsgaard, 2013). However, Research into entrepreneurship nexus has been progressed under different perspectives.

The critical realism as the dominant stream sees opportunities as an actor-independent phenomenon (Eckhardt and Shane, 2013). Yet, an emergent body of literature points to the shortcoming in this view. Because this view has underestimated the roles of time, social context and the knowledge, perspective and action of entrepreneurs in the construction of opportunity (Seymour, 2006) and Thus, has too simplified the nexus between entrepreneur and opportunity (Ramoglou and Zyglidopoulos, 2015; Korsgaard, 2013). The other stream adapts the social constructionism as a useful framework for better understanding the nexus view (Sarason et al., 2006) and asserts the opportunities as social actions and conditions enact through the interactions of people (Alvarez and Barney, 2010). This approach has received relatively slight critical attention. However, from their evolutionary realism epistemological view, the study of the entrepreneurship nexus is merely the study of how entrepreneurs define the opportunities (Korsgaard, 2013). Thus, it denies the pre-existing of the entrepreneurial opportunities in the form of premarket demands and refers it as just actually engineered by the expert entrepreneurs (Ramoglou and Zyglidopoulos, 2015).

By drawing attention to these shortcomings, also based on some other views that considered the entrepreneurship not only as the solely function of opportunity, but rather as a function of contextual perceptions of opportunity (Dana, 1995), there formed another alternative view of the hermeneutic phenomenology to the nature of the entrepreneurship nexus, with radically different ontological and epistemological foundations (Berglund, 2015; Seymour, 2006). Contrary to the traditional subject-object divisions, the ontological perspective of hermeneutic supposes the human being as not separate from the context (Berglund, 2015). Instead, it assumes the human Being-in-the-World as thrown into a pre-existing world that is inseparably woven into an already constructed world. In this approach, the human being-in-the-world is supposed to attune himself to the physical and cultural pre-context and that to understand the nature of anything needs to relate it to other things in its past and its future; then articulates, interprets and converses his understanding with others (Friederike and Gartner, 2016). Thus, from the epistemological perspective of hermeneutic, the intersubjective meaning of entrepreneurship nexus would be interpreted in terms of the fore-structures, the concernfull dealings, livelihood actions, interchanges and the possibilities that the entrepreneurs project (Berglund, 2015; Dimov, 2011; Seymour, 2006).
Table 1  A brief description of the nature of entrepreneurial opportunity in the literature

<table>
<thead>
<tr>
<th>Nature of entrepreneurial opportunity</th>
<th>Brief description</th>
<th>Researcher</th>
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<tbody>
<tr>
<td>Exogenous</td>
<td>Technological upheaval/degree of discontinuity in market or technologic factors</td>
<td>Holmén et al. (2007)</td>
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<td></td>
<td>Fixed natural relationships of cause and effect</td>
<td>McMullen et al. (2007)</td>
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<tr>
<td></td>
<td>Real situations in which new goods, services, materials, markets and organising can be introduced</td>
<td>Shane and Venkataraman (2000)</td>
</tr>
<tr>
<td></td>
<td>The propensity of market demand to be actualised into profits</td>
<td>Ramoglou and Tsang (2016)</td>
</tr>
<tr>
<td></td>
<td>Unmet market demand/ latent customer demand</td>
<td>McMullen and Dimov (2013)</td>
</tr>
<tr>
<td></td>
<td>The possibility of future desire</td>
<td>Ramoglou and Tsang (2016)</td>
</tr>
<tr>
<td></td>
<td>Future situation which is desirable, controllable and feasible</td>
<td>Gartner et al. (2008)</td>
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<tr>
<td></td>
<td>The gradual formation of exchange relationships in the market</td>
<td>Dimov (2011)</td>
</tr>
<tr>
<td></td>
<td>Competitive imperfections exist in product or factor markets</td>
<td>Davidsson (2016)</td>
</tr>
<tr>
<td></td>
<td>External circumstances that affect supply, demand, costs, prices, or payoff structures</td>
<td></td>
</tr>
<tr>
<td>Endogenous</td>
<td>Imaginative projection of a favourable state of the world</td>
<td>Klein (2008)</td>
</tr>
<tr>
<td></td>
<td>Expectations about the future under conditions of uncertainty</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Individuals’ prior knowledge and insights</td>
<td>Shane (2000)</td>
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<td></td>
<td>Shared meaning in social network structures</td>
<td>Companies and McMullens (2007)</td>
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<tr>
<td></td>
<td>Properly justified belief about a favourable situation</td>
<td>McMullen et al. (2007)</td>
</tr>
<tr>
<td></td>
<td>Judgments under the uncertainty</td>
<td>Foss and Klein (2012)</td>
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<td></td>
<td>Individuals insights that developed based on their intuitive patterns relating to the emerging business environment</td>
<td>Dutta and Crossan (2005)</td>
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<td></td>
<td>Entrepreneurial vision and intuition/forward-looking, involve future prospects</td>
<td>Lewin (2015)</td>
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<tr>
<td></td>
<td>Continuously developed and modified ideas propped by perceptions and beliefs formed from the interpretations of tangible evidence</td>
<td>Davidsson (2016)</td>
</tr>
<tr>
<td></td>
<td>An agent’s evaluation of a stimulus as a basis for the creation of new economic activity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The entrepreneur’s abilities and efforts</td>
<td>Thomas et al. (1993)</td>
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Interpretation of the nexus between the entrepreneurs and entrepreneurial

2.4 The healthcare and medical service in the country

Healthcare and medical services in Iran date back to the ancient when Iran was a pioneer of medicine in the world. Nowadays, Iranians are well benefitted from high standards of healthcare by the internationally well-known physician, surgeons and bio-pharmaceutical scientist. The healthcare sectors in Iran have been made up of many different industries from pharmaceutical and devices to health insurance and hospitals and each has different dynamics. The Iranian healthcare system is based on the public provision of services, with subsidies coming through different organisations and non-governmental sectors. The unique combination of experiences, facilities and natural resources is the key success of the Iranian healthcare system. Recently, in major response to the universal health coverage, by May 2014, the Iran healthcare reform called ‘healthcare transformation plan’ was initiated with the objective to provide more financial resources, enhance the health status, encourage the entrepreneurs to set up knowledge-based businesses and guarantee equity in the provision of health and medical service for all Iranian (CFIHS, 2016). As a result in the year 2016, there were 656 knowledge-based entrepreneurial enterprises operating in the field of healthcare. 112 out of them are in the pharmaceutical, 231 in the medical biotechnology, 89 in the medical and 224 in the laboratory device sectors. Besides, there are 22 m-health enterprises in Iran who are active in providing the healthy lifestyle in the country (Vatanpour et al., 2016).

3 Research methodology

Since no research has been found that addresses the issues of the entrepreneur-opportunity nexus in healthcare entrepreneurship, the research methodology of qualitative hermeneutic (interpretive) phenomenology was selected to gain a deeper understanding and to interpret the participant’s lived experiences (Abebrese, 2014) in the context of healthcare entrepreneurship. The study designed in both research design and analysis on the principles of interpretative phenomenological analysis (IPA) developed by Smith et al. (1999). It’s an appropriate way to explore participants’ sense-making of their personal, interpersonal and surrounded sociocultural world (Biggerstaff and Thompson, 2008).

IPA sampling is purposive (Cope, 2011). The focus of purposive sampling is to produce a clarifying interpretative account that is grounded in each participant’s unique lived experience (Raco and Tanod, 2014). Our sample included 16 entrepreneurs from 656 active healthcare enterprises who meet two criteria. They all have founded and owned individually and their entrepreneurs had unique stories and successful experiences that brought rich information to our research. Entrepreneurs’ contact information was obtained through the Research and Technology Development Office of Ministry of Health and Medical Education of Iran.

The interviewees were selected across all sectors and from both genders. Six participants were female, ten were male. Five participants were selected from medical devices, six from medical biotechnology, two from m-health and three from pharmaceutical. The average experience of entrepreneurs was almost fifteen years and all possess good abilities to share the meaning of their lived experiences about the issue. Our interview protocol was formulated based on the two-tiered phenomenological interviewing approach of Giorgi (1989). This method has two layers of
contextualisation: obtaining descriptions of the context associated with participants experiences

2 apprehending the phenomenon: eliciting the meaning of the participant’s life-world experiences (Bevan, 2014).

This method required three interviews per person (Seidman, 2013). Thus, we conducted three face-to-face semi-structured interviews with each participant. In the first, our focus was on the life experience of each person. In second, we tried to reconstruct the experience within the context and discovered its relationships and structures. The main focus here was on the critical incidents, actions and situations which led them to a specific opportunity. In the end, we entered to the hermeneutic cycle (Berglund, 2015) which is moving back and forward to the data extracted and our theoretical framework in order to elicit and interpret the meaning of the participants’ experiences.

The data gathering timeline was November 2016 to January 2017. The interviews were transcribed and analysed using the IPA method which is both flexible in its approach and systematic in its procedure (Smith et al., 1999). According to Cope (2011) our data analysis started with

1 detailed reading and re-reading of the transcripts and gaining insight about each case
2 immersion and sense-making of the case by participation of the interviewee which resulted in extracting the meaning units and common clusters of meanings
3 categorisation and linking the clusters to the emergence of themes of each case and developing intra-case themes
4 conducting a master-level analysis across the cases and extract the inter-case commonalities (master-themes)
5 recognising meta-level themes across the cases
6 writing up the interpretations
7 explaining and abstracting through enfolding the literature.

It is notable that step two is seen as participants validation/member checking.

4 Findings

The findings emerged from the interviews to form 642 meaning units, 489 clusters of meaning, 56 master-themes, 17 meta-themes and finally five overall themes which indicate the innate nature of entrepreneur-opportunity nexus in healthcare entrepreneurship context. The five final themes are:

1 the individual context-based presuppositions
2 the external facilities in macro levels
3 the external facilities in micro levels
4 the entrepreneur’s presuppositions-oriented actions
5 the entrepreneur’s environmentally oriented actions.
The following analytical sections explicate both the process and content dimensions of each theme.

4.1 The presuppositions-based nature of the nexus

The experiences of all participants illustrated that the endogenous nature of the entrepreneur-opportunity nexus emanates from the individual presuppositions. These presuppositions originated from the conformation of the entrepreneurs to the surrounded physical, historical and sociocultural world that they are living in. For participants in the context of the healthcare, this has resulted in creating and developing unique insight that shapes the inner nature of the opportunity that they are confronted and pursued. The context-based insights is the first theme in this cluster with eleven distinctive spheres of – timing and accuracy, uncertainty avoidance, collaboration, relying on tacit knowledge and skill, product-centric approach, inductive reasoning, critical reasoning, strategic thinking, the incremental innovation belief, the belief in new combinations creation and information asymmetry and network beliefs.

In terms of timing and accuracy, 85% of the participants experienced some form of the exact combination of quickness and nimbleness as the innate nature of healthcare opportunity. As P2 shared her view: ‘The clinical trial of allogeneic mesenchymal stem cells for treatment of knee osteoarthritis usually takes an amount of time; so we must find efficient ways to navigate the clinical trials and the approval process while being accurate in finding the appropriate way to connect between the in vitro, preclinical and human data’.

The uncertainty avoidance belief was the implicit assumption of all participants about the business opportunities which are going to be brought into the healthcare market. As P9 said: ‘Acting in the healthcare industry means being extraordinarily conservative, it does not make sense to be a risk taker person or to just have your minimum viable product (MVP) when you are inventing something for saving the life of the people’.

75% of participants believed that bringing the healthcare business opportunity to the market requires collaboration and progress through team member’s synergy. While 90% of them indicated that the tacit knowledge and skills that are difficult to transfer to other groups of professional even in the same field of work are shaping the unique nature of those opportunities. As P3 indicated: ‘Our main advantages are our inimitable skills in producing medicinal bio-products like a biosimilar of Beractant in our own ways that come from the combination of every member of the team’s knowledge’.

Sixty six percent of participants expressed the product-centric approach in their experience. P5 said that: ‘We were passionate to conduct a project that finally we could touch its output rather leading to an academic paper’. All participants believed that inductive and critical reasoning are the inseparable parts of their insight which shape the nature of the opportunities they have brought to the healthcare market. As in P7 experience: ‘Our perpetual seeking and applying all possible solutions, also avoiding the distorting of our clinical findings by theoretical assumptions resulted into the introduction of a biosimilar form of recombinant activated factor VII (AryoSeven) as the treatment of patients with coagulation factor VIII’.

While the inductive and critical reasoning is the important part of their experiences, 62% of the participants believed that strategic thinking in form of having long lasting and conceptual perspectives on the factors in the healthcare industry is critical endogenous
part of the nexus. P4 believed that: ‘The market is changing; each technology has its own critical points that would change during the R&D and investigation process. Identifying the critical points and focus on changing environment is crucial for the development of a business in the field of bio-electromagnetic therapy’.

In terms of incremental innovation belief, two participants from the medical device sector supposed that ‘in a typical medical device development breakthrough innovations happen rarely’ (P10). Rather ‘we are undertaking too many incremental inventions to enhance the quality of existing devices and improve the social welfare of societies’ (P8). Furthermore, the P12 from the m-health sector believed that: ‘Developing self-care mobile application in the field of natural childbirth has made an improvement in the healthy pregnancy lifestyle’. In contrast, the belief in new combinations creation was indicated by the rest of participants. As P9 specified: ‘The combination of effective new tools to create new organisms was our assumption in overcoming the traditional treatment approaches’. From the viewpoint of 75% of participants, these radical innovation approaches are essential parts of entrepreneurial activities in biopharmaceuticals and advanced medical devices.

The final context-based insight of the entrepreneurs is the information asymmetry and network beliefs that reflected in forms of: ‘access to black market information in pharmaceuticals’ (P11) or ‘[forming] strong social ties with regulatory institutions and policy-makers’ (P16). The context-based projections are the second individual presuppositions-based nature of nexus with two spheres of – projection towards future windows of opportunities and projection towards the global position. From the viewpoint of 77% of participants, the windows of opportunities projections in forms of: ‘projecting the therapeutic solutions for the elimination of environmental damage’ (P15) or ‘the projection of possibilities for responding the unmet physical and mental deficiency’ (P6) are the ways for understanding of how existing trends would make the changes in the future situations. The global projections are also reflected by 62% of respondents as: ‘tracing the global trends in the field of prevention in order to enter the international arena’ (P5) or ‘projecting toward the global business and not just be limited to national boundaries’ (P7).

The third theme of individual presuppositions-based nature of nexus emanated from healthcare entrepreneurs’ dispositional attribution. The findings illustrate that the need for cognition, self-efficacy and the charismatic personality are master-themes of this group. The reflection of the first two themes in the experience of P4 is: ‘We believe that we finally would fix the bugs of existing foreign models, thus we implemented our own treating protocol upon it. However, in five first years, we just got visa-Versa answer but we continually stayed determined and purposeful’.

Lastly, the charismatic personality is the final individual presuppositions which shape the essential nature of the entrepreneurship nexus. As such in the P3 interview: ‘It’s all about leading a team consist of PhD candidates of medical biotech, physicians, immunologists also some market and financial specialists and directing them in the right stream to commercialisation’.

4.2 The environmentally-based nature of the entrepreneurship nexus

All of the respondents expressed that the external facilities that stem from the micro and macro conditions of healthcare environment are the essential factors shaping the exogenous nature of entrepreneurship nexus.
The findings highlighted that the macro external facilities fall into three broad themes – the institutional supports, the development of converging technologies and the sociocultural readiness.

In terms of institutional supports all participants indicated that the implementation of the national health transformation plan has resulted in the increase of demands for consumer medical devices, the enhancement of health insurance coverage and thus increase in the medical demands, the investment encouragement and applying the integration policy in the business financing, the protectionism, the supporting of the knowledge-based businesses and the development of a national health monitoring system. These conditions pave the way for flourishing the new business opportunities in the healthcare context of Iran and accordingly are introduced as the exogenous part of the entrepreneurship nexus. The following comment by P8 is particularly illustrative about the institutional supportive mechanisms: ‘Ministry of Health indicates the medical and equipment’s requirements of the country each year and prioritise them from high to low risks, like coronary stent that is always at the highest priority. The domestic producers who can pass the checklist of the standard have the priority over the importers’.

All the participants articulated the advance in the ICT, digital media, nanotechnology, robotics, biotechnology, cognitive science and genetic engineering as the arms for creating and developing the healthcare businesses in all over the sectors. In addition to these facilities, 94% of participants indicated the increasing health awareness. The ‘self-care and preventing the non-communicable diseases’ (P2) and the ‘growth of the level of public access to information on the online and mobile health apps’ (P12) are other macro external facilities which shaped the opportunities for the entrepreneurs in the healthcare industry. The findings regarding micro external facilities highlighted three themes including – the structural deficiencies, the unmet potential for the market and the growth of the private investment.

The structural deficiencies in fields of lifestyle that P13 had faced were: ‘the inefficiencies of hardware and software that prevent us to publicise the m-Health’, while in pharmacotherapy P3 had challenged on the ‘defects and failure of chemical drugs’.

Moreover, in the field of medical devices, the P11 pointed to ‘the deficiencies and inconvenience of rehabilitation systems for the paraplegic patients and people with lower limb disabilities’. While the P10 indicated ‘the inconvenience of hospital beds’. From the experience of 88% of participants, these shortcomings were the triggers that had guided the professional healthcare entrepreneurs to improve the quality of healthcare structure in the country. The unmet potentials for the healthcare market of Iran such as ‘the capacity of medical tourism’ (P14), ‘shortage or excess demand in case of consumer medical item’ (P9) or ‘years of experiences and tacit skills in producing biosimilars’ (P3), as well as the potential needs of the neighbouring healthcare markets like ‘the unmet medical needs of Islamic countries in the Middle East to originally Halal biopharmaceutical’ (P3) are among the micro drivers of healthcare entrepreneurs.

Finally, all interviewees specified the growing attrition of private investors to the healthcare market in form of ‘recent private venture capital focuses on healthcare and lifestyle’ (P4) and ‘the entrance of foreign investments especially in years after the sanction’ (P2) as important external-based nature of the entrepreneurship nexus.
4.3 The action-based nature of the entrepreneurship nexus

This study illustrated the interconnected nature of the entrepreneurs-opportunity arises from the nexus of environmental facilities with the individual context based presuppositions. This interconnection reflects on the entrepreneur’s environmentally oriented actions. The findings uncovered three spheres in which the actions of entrepreneurs were exerted upon the external facilities – exploitation of the capacities of converging technologies to satisfy the market structural deficiencies, meet the domestic and foreign markets potential and the exploitation of the institutional and private support.

In terms of exploiting the capacities of converging technologies, P13 indicated the act of designing and developing ICT based solutions like ‘designing the platform of health cloud for satisfying the deficiencies in the healthy lifestyle’. Furthermore, The P11 specified ‘the integration of electronics, mechanics and robotics technologies to the development of a new rehabilitation system of exoskeleton robots’ and the P1 indicated ‘the integration of electronics, medical and software engineering with ear, nose and throat specialists’ skills to the development of an advanced cochlear implant system’.

From the experience of P3, the act of ‘creating a medical biotechnology accelerator for producing the orphan drugs’ and from the experience of P10, ‘designing and producing the smart hospital beds for the optimal care’ are the actions toward satisfying the existing needs in the domestic healthcare context. While ‘the development of genetic engineering strategies to the neighbouring countries’ (P7) and ‘exporting the originally Halal biopharmaceutical to the neighbouring countries’ (P3) were their activities to fulfil the potential of the foreign market. Some of the actions regarding the exploitation of the institutional supports were in forms of: ‘make the most of the government subsidies to domestic products’ (P2) or ‘take the advantages of the integrated mechanism of supply and distribution in cases of medications and medical equipment imposed by the ministry’.

Finally, the actions upon the dedicated private supports were like: ‘fundraising in the transition from clinical trial period to the commercialisation’ as it was experienced by the P4, or ‘attract the foreign investments from India and Taiwan’ by the P9. From the experiences of all participants, the final dimension of the nature of the entrepreneurship nexus is the actions originated from the individual presuppositions towards the environmental facilities. Their presuppositions-oriented actions consist of four master-themes of – managing and guiding the resources, the right to the point deeds, proving of the opportunity and developing the new business ideas.

The managing and guiding the resources elicited from the experiences of 88% of participants with three meta-themes. Eliciting the meanings illustrated that this action originated from the context-based insights of collaboration, strategic thinking and information asymmetry and network beliefs. It also originated from the self-efficacy and charismatic personality of the entrepreneurs. The first theme in this category is managing the stakeholder interests, as reflected in the experience of P3: ‘I’m not an investor I’m a scientist managing a group of the technologists, physicians, immunologists who also get financed from both the governance and a private VC, So if I wanted to stay at the centre of playing field I have to know all counterparties interest and trying to fulfil them all’.

The second is converging the resources. This was expressed as a considerable challenge in all participant experiences. In this regard, the P16 said: ‘We benefit entirely from our governmental and non-governmental network capacities in form of incorporating the VC funds, the supports getting from the presidential deputy for science
and technology and the Iranian society of manufactures and exports of medical biotech products’.

Our findings indicated the penetrating in the upstream circles of policymaking as the third act in this cluster of meaning. The P15 said: ‘We should definitely benefit the rents and the dealing to the key players….think of the possibilities you can get from connection to a scientific team leading by the minister …You do have to work with them to stay as a part of the game….The complexity of our business is all about knowing and linking to the main lobbies of power’.

Our findings uncover the right to the point deeds as the second presuppositions-oriented action of the entrepreneurs. This refers to the effective efforts at the right time and place and emanated from the timing and accuracy and product-centric beliefs of the 78% of interviewees. As such in the P5 experience: ‘We created the system in 22 months and that was our lifeseline because that was concurrent to the sanction and due to that the currency priced tripled and if we had not completed, the system would have definitely died’. From the meaning elicited from all entrepreneurs’ experiences, the third presuppositions based action is the proving of opportunity. This derives from the uncertainty avoidance, the inductive and critical reasoning beliefs and the need for cognition attributions of the entrepreneurs. It reflected as: ‘raising the confidence of medical solutions by the experiments or observations done in clinical research’ (P7) or ‘diagnostic trials to find better methods of procedures’ (P8), in the experiences of the participants.

**Figure 1** The nature of the entrepreneurship nexus in healthcare context
Developing the new business ideas is the final presuppositions-based action that elicited from the critical reasoning, the tacit knowledge and skill, the incremental innovation and new combinations creation beliefs, in addition to the projection towards future windows of opportunities of 66% of the participants. Findings presented here demonstrated that owing to their scientific efforts, the entrepreneurs come up with the new treating and enhancer ideas. However, they have faced the absence of the market for commercialising their ideas. Yet they have not refused to improve their ideas into the tangible products or solutions and have tried to attract all the necessary support for their development. From their experiences, some of their new ideas are in forms of: ‘recreating modern medical equipment based on the convergence of mechanic and information technology with cognitive science’ (P11) and ‘recreating the new strategic solution on the basis of the stem cell technology to the production of amniotic membrane’ (P2).

In the end, the results that were described in detail in the findings sections is illustrated in Figure 1.

5 Discussion

The purpose of this study was to fill the gap in existing literature on the dichotomy of the entrepreneurs and the opportunities and to interpret the intersubjective meaning emanated from the interaction of the enterprising individuals and the lucrative entrepreneurial opportunities in the flourished context of healthcare entrepreneurship wherein lived experiences of the entrepreneurs inherently shape their perceptions of the possible business opportunities. For achieving our purpose we asked the main question of how do healthcare entrepreneurs perceive and give meaning to their business opportunity over time within a world of work and others. Regarding the IPA methodology, the finding indicated three intersubjective themes of the entrepreneurial presuppositions, the external facilities and the entrepreneurial actions as the nature of the entrepreneurship nexus.

Since most entrepreneurship scholars considered the entrepreneur as given or implicit (Hansen et al., 2016). Our findings regard the entrepreneurial presuppositions indicated that there cannot arise the entrepreneurship without the entrepreneur teams or individuals who have the perceptive abilities which are influenced by their cultural values and beliefs (Dana, 1997). Our result here conforms to the hermeneutical interpretation of the entrepreneurship on the basis of the perceptual features of being-In (individual) in the articulation of the world into recognisable communicable patterns of meaning (Seymour, 2006), which involves the fore-conception, fore-having and foresight of the individual regarding its conformation to the context (Wojnar and Swanson, 2007).

In the case of context-based insights, the relying on tacit knowledge and skill sphere is in accordance to the Shane (2000) entrepreneur’s prior knowledge which is one of the indicators of the nature of the entrepreneurial opportunity. In addition confirming the Kirzner (1973) theory of alert entrepreneur, the information asymmetry is a precondition for the existence of entrepreneurial opportunities, in the sense that the entrepreneurs often capitalise on gained knowledge and profit from information asymmetry (Liñán and Kurczewska, 2017). Furthermore, the inductive reasoning beliefs of our entrepreneurs in healthcare areas are the same as the Kirzner (1973) indication about the alert entrepreneur sufficiency in discovering the earlier errors in prior entrepreneur’s actions. Whilst several conceptual studies have highlighted the uncertainty as of the critical component of the entrepreneurial opportunity (Dimov, 2007), the findings presented here demonstrated that
the nature of healthcare entrepreneurial opportunities relies on the uncertainty avoidance of the entrepreneurs, due to the critical aspect of the healthcare solutions or products in human beings life.

In terms of the belief in new combinations creation, Davidsson (2016) specified the efforts of the entrepreneurs in creating the new bundle of resources, or their engagements to address the market failure problems, through the creation of the new combinations of supply-demand as the essential efforts resulted in opportunity creation. Our finding regarding the incremental innovation belief of healthcare entrepreneurs is also in keeping with the Schumpeter (1947) notion of entrepreneurs as an innovator. He called the entrepreneur as the disrupter of the established orders who makes the creative destruction. However, our finding here indicated that due to the nature of the healthcare context regarding the accuracy and validity of its outcomes, the radical destruction in this area requires significant time and efforts, thus the mainstream innovations are at the incremental level.

Our finding concerning the entrepreneurs’ projection towards future windows of opportunities is in line with the Dimov (2011) indication about the aspiring entrepreneur’s vision of a future in which he/she occupies a market niche. Besides, our notion of projections towards the global position is in consonance with the Lewin (2015) idea of entrepreneurial forward-looking visions towards appropriate future prospects in the globe.

With regard to the particular aspect of individual personalities in the entrepreneurship nexus, Dana (1996) indicated the predisposition in the certain individual’s personality as a motive to the entrepreneurship. The entrepreneurs’ dispositional attributions have introduced as the important characteristics of the entrepreneur, especially the individual’s sense of self-efficacy has identified as the influential component in opportunity creation (Liñán and Kurczewska, 2017).

In addition or somehow in the absence of dispositional attributes the external circumstances play the role of drivers of the entrepreneurship (Dana, 1997). The label of external enablers introduced by Davidsson (2016), as the essence of opportunity construct and conceptualised as ‘the distinct, external circumstance, which – by affecting supply, demand, costs, prices, or payoff structures – can play an essential role in enabling entrepreneurial agents into venture development’ (P.235). Our findings respecting to the external micro and macro facilities also refer to the pre-existing and actor-independent nature of nexus stem from the environmental changes caused by either the regulatory institutions, policymakers, market structure of healthcare or sociocultural conditions of the country.

Confirming to Dimov (2011); the external and presuppositions oriented entrepreneurial actions emphasise the inherent nature of entrepreneurship nexus that emanated from the empirical and implicit practices, plus livelihood activities of the entrepreneurs through their interactions with the sociocultural surrounding. Our participants’ experience of integrating the technologies into the development of new systems are the activity consists of introducing new means in order to meet new or existing ends. So, here findings are conforming to the notions of entrepreneurship as the processes of the optimisation within existing means-ends frameworks (Shane and Venkataraman, 2000). The act of proving the opportunity is an inseparable part of any healthcare business activity. The clinical trial is an essential activity of healthcare entrepreneurship that cannot be ignored. This part of the healthcare entrepreneurship
nexus is relevant to the construct of opportunity confidence (Dimov, 2007) which has been discussed as the ‘result of an agent’s evaluation of the external enabler or new venture idea as a basis for the creation of new economic activity’ (Davidsson, 2015, 2016).

Finally, our ultimate finding of developing the new business ideas in absence of the market is contributed to the new venture ideas construct of (Davidsson, 2016). He specified the new venture ideas as the imagined future ventures that their favourability and feasibility have not been proven yet. ‘They may or may not reflect actors’ interpretation of external conditions and sometimes have not no obvious connection to an identifiable external condition’ (P. 239).

6 Conclusions and implications

This study makes several contributions to the understanding of the entrepreneurship nexus in the healthcare area. First, the findings presented in this research indicate the value of the technological, sociocultural, regular and institutional conditions, also, the market structures of the healthcare context of a developing country in the prosperity of the professional healthcare entrepreneurs. Second, the significance of our findings heightens by the research’s focus on the professional independence healthcare entrepreneurs and their contributions to the emergence and the development of the prominent business opportunities in the context of healthcare. Since these groups of entrepreneurs have rarely been under the investigation of the entrepreneurship researchers. The way they interpret their perceptions and actions and their intersubjective understanding about the nature of their interplay to the context has the epistemological value in case of disclosing the world and grounds of the healthcare business entrepreneurship. Third, our investigation contains the multiple levels of analysis and explicitly indicated the individual, team (venture) along with relevant macro and micro characteristics of the environment as the essential parts of the entrepreneurship nexus. Fourth, we contribute to the entrepreneurship literature by offering an integrated model shown in figure 1., which shows the interplay of the environmental elements and the perceptual and behavioural (action based) abilities of the person as the integral components in shaping the entrepreneurship process as the whole. We believe this will help future scholars in the case of examining and developing the model in other flourished contexts of entrepreneurship that thus make research models more robust and contribute to the accretion of knowledge about the entrepreneurship nexus.

The points that all the participant entrepreneurs were expert and successful in their experiences and were allowed to express the elicit meaning of their experiences in their own language and feelings; verify the reliability of our funding. However, the nature of the qualitative research has restricted the generalisability of its finding. Thus, we believe that conducting future quantitative studies in larger samples of entrepreneurs in different or multiple healthcare sectors would validate the finding of this research.

We hope that our results will serve as the guidance for professionals, potentials and nascent entrepreneurs in the healthcare areas. Given to the significance of individual presuppositions and dispositional attributions, we suggest them to learn how to develop their own unique perceptual abilities, especially their spatial perception that enables them to proactively and attentively interact with the environment consist of institutions, objects, elements and people surrounding them. This would result in enacting the
prominent entrepreneurial opportunity which has the ultimate potential to become an advantageous healthcare entrepreneurial venture. We also recommend to the government agencies in developing countries to provide healthcare entrepreneurs with special advantages such as designing the systems for identifying and assessing the healthcare needs of the society, providing the necessary infrastructure for the development of related technologies, implementing loan programs that provide entrepreneurs with amount of capital they need to start their businesses and facilitating a networking system to secure their contracts to the private and foreigner investors.

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Interpretation of the nexus between the entrepreneurs and entrepreneurial


