

Entrepreneurial Knowledge and Intention of House Officers in Dental Hospitals of Twin Cities

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Abstract

Introduction: There are limited job opportunities for dentists in Pakistan. International market however has evolved over the years from manual dentistry to robotics to artificial intelligence, simulations, 3D dentistry, and teledentistry and finally to CRISPER. In Pakistan, jobs and such startups / enterprises options are insufficient. Moreover, young dentists are not aware of different entrepreneur options available to them, leading to depression and frustration. This research study was carried out to assess the entrepreneurial intention of house officers in dental hospitals of twin cities.

Material & Methods: It was a cross-sectional study that assessed the entrepreneurial intention among fresh graduates of all the dental colleges in Islamabad / Rawalpindi. A questionnaire was developed on Google form and validated (Cronbach's alpha > 0.7). The questionnaire link along with the consent form was sent through Whatsapp to Principals of Dental Colleges, who disseminated it to respective house officers. Responses were collected and then descriptive statistics and frequencies were calculated through SPSS to evaluate their level of awareness.

Results: Most of the study participants exhibited familiarity with entrepreneurship, except for queries concerning 1. Entrepreneurial options within Dentistry (48% answered positively), 2. Distinguishing between startup and entrepreneurship (43% answered affirmatively), and 3. Awareness of Dental entrepreneurship as an undergraduate subject (33% responded positively).

Conclusion: Most of the house officers (79%) were worried about limited job opportunities. Despite having awareness about entrepreneurship, their awareness regarding dental entrepreneurship options was limited (45%). They recognized the significance of introducing Dental entrepreneurship as a course at the undergraduate level.

Keywords: Dentistry; Entrepreneurship; Awareness; Dental School; Innovation

Introduction

Entrepreneurship is defined as, "the ability and readiness to develop, organize and run a business enterprise".¹ In order to start an enterprise, a person

should have an entrepreneur awareness, basic skill to establish it and confidence to run it efficiently.^{2, 3} Over the years, the need for entrepreneurship has grown especially in third world countries like Pakistan due to limited job opportunities, financial limitations and need to improvise life styles.⁴ When discussing entrepreneurship, specific qualities must be cultivated and honed to initiate one's enterprise. These attributes include being innovative, having the courage to take risks, demonstrating hard work, being flexible, and assuming responsibility, but the main issue is

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the awareness. After the awareness of a concept, it is easier to polish such skills.⁵ Entrepreneurship opportunities are not new to the dental world. People are already into dental products business which has grown quiet rapidly in the recent past. Dental Chairs, sterilization armamentarium including autoclaves, radiology units i.e., digital x-rays to MRI and CBCT's have already developed their place even in Pakistan market.^{6,7} Despite this, there are many unexplored options in the local market. Simulations in dentistry, teaching phantom heads, cadavers, robotics, intra-oral scanners, 3-D microscopes, stereo-lithography, photometry and CAD/CAM and CRISPER technology.⁸⁻¹⁰ Dentists in Pakistan may be using many of these but are not aware of developing startups or entrepreneur dealing with these products. They are aware at user level but not at an entrepreneur level. COVID times have brought teledentistry into fashion as well, different teaching and assessment tools have come into practice such as kahoot, animoto, edmodo and moodle etc. However, the problem remains the same that the Pakistani population associated with dentistry are the users and not the entrepreneurs¹¹⁻¹³. Many practitioners have converted their private practices into an enterprise. This has improved the standard of clinical diligence and deliverance and standard of their own living.¹⁴ But the issue is that young dentists who have just graduated lack the relevant information and awareness. They have been taught only the clinical part but the need of the day is to make them aware of opportunities from academics, to enterprise practices to startups and entrepreneurships.¹⁵⁻¹⁷ Thus, there is a dire need to bring change in our curricula so that the Pakistani population associated with dentistry is at par with the international market. Their continuous struggle for jobs and the prevailing unemployment will create more turmoil and frustration.¹⁸⁻¹⁹

Hence, the aim of this study is to assess young dentists' entrepreneurial awareness with the rationale that this might help them to think for developing small business and creating jobs rather than seeking jobs.

Operational Definition

Entrepreneurial Intention

Entrepreneurial intention is defined as the conscious state of mind to have an interest and intent to start an enterprise or be an entrepreneur in the near future.⁵

This will also be the study's variable to judge the students and house officers on the basis of the questionnaire.

Dental Entrepreneurship Behavior

Dental Entrepreneurship Behavior is defined as attitude of dentists towards self-owned dental practice, private hospital based practice, dental salon, dental equipment/Materials enterprises and 3-D based dental technologies etc.¹⁸

Material & Methods

This is a multicenter Cross-sectional questionnaire based study carried out in dental colleges of twin cities. The sample size, determined using the Raosoft® sample size calculator, was 177, with a confidence interval of 95% and a margin of error of 5%. The received responses matched the calculated sample size. The reliability of the questionnaire was assessed before starting the data collection by applying Cronbach Alpha, the value 0.7, suggests that was reliable.

The study was conducted from May 2022 to July 2022, the study spanned two months after obtaining ethical approval from the Institutional Review Board of Rawal Institute of Health Sciences. A non-probability convenience sampling technique was employed. House officers from dental colleges/hospitals in twin cities offering house jobs to dental graduates were included. The study excluded medical house officers,

dental postgraduate students, and dentists involved in clinical practice or academia. The questionnaire comprised demographic details and 15 questions about participants' intentions to open a dental practice/business and their basic knowledge of dentistry entrepreneurship. It consisted of three parts: 1. Demographic details, 2. General entrepreneurship questions, and 3. Assessment of skills and attributes. A three-point Likert scale was used in the latter two sections. The research questionnaire, including the consent form (Annexure 2), was uploaded on Google Forms (Google LLC 1600 Amphitheatre Pkwy Mountain View, CA 94043 USA) and distributed via WhatsApp® by the Principals of dental colleges in twin cities. They were requested to distribute the questionnaire through their respective house officers' WhatsApp® groups, with an auto-email option for traceable responses. Table I presents the statistics of responses received from each hospital.

Table I: Responses from each college/hospital

Name of Dental College/Hospital	Number of Responses received
Rawal Institute of Health Sciences	88
Islamabad Medical and Dental College	13
Islamic International Dental Hospital	15
Watim Dental Hospital	4
Margalla Hospital Islamabad	21
Foundation University College of Dentistry Islamabad	8
School of Dentistry	26

Statistical Analysis:

Statistical Package for Social Sciences (SPSS) 25.0 was used for statistical analysis. Descriptive Statistics and frequency were assessed for each variable/question in the questionnaire.

Results

The survey was carried out at Rawal Institute of Health Sciences and through the various teaching hospitals of Islamabad and Rawalpindi.

The sample distribution on the basis of demographic details is given below in the figure.1 for gender and figure.2 for age.

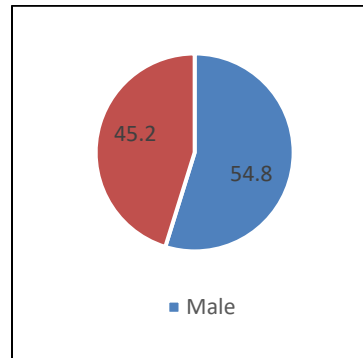


Figure 1: Sample Distribution according to Gender

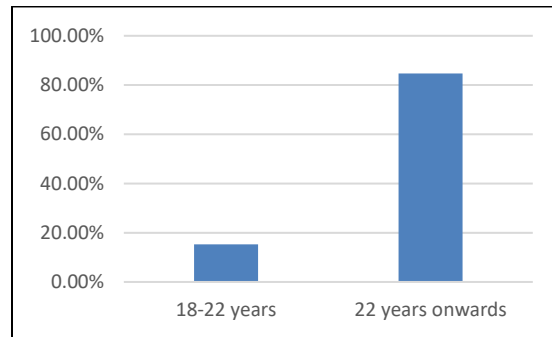


Figure 2: Sample Distribution according to Age

Table II: Descriptive Statistics showing Frequency of Responses

Questions	Frequency		
	YES	NO	MAYBE
Do you know an entrepreneur in your social circle?	67%	23%	8%
Do you have an idea about Entrepreneurship options in dentistry?	48%	39%	12%
Are you concerned for a job after BDS, considering the lack of job opportunities?	79%	15%	5%
Are you planning to pursue Private/Public Hospital Based Clinical Practice in the near future?	79%	11%	8%
Do you see yourself starting a dentistry based entrepreneurship in the near future?	68%	18%	13%
Do you know about the difference between entrepreneurship and startups?	45%	29%	24%
Will you be willing to attend a counsel/lecture on entrepreneurship before entering into dentistry based entrepreneurship?	76%	16%	6%

Questions	Frequency		
	YES	NO	MAYBE
Do you think Dental Entrepreneurship should be part of undergraduate dental studies as a separate module?	71%	16%	28%
Do you know Dental Schools which have Dental entrepreneurship as part of Undergraduate studies?	33%	52%	13%
Opt for Privately Owned Solo Practice?	65%	6%	27%
Work for Corporate dental chains	50%	11%	37%
Opt for co-branded dentistry	57%	6%	36%
Understand the challenges faced during setting up entrepreneurship	71%	8%	19%
The failure of a business will have a negative impact in your life	50%	19%	30%
Try finding solutions to challenges	74%	9%	16%
Can Innovations solve the challenges?	67%	6%	26%
Can bridging the gap helps in managing problems/challenges?	63%	6%	29%
Consider continued Dental education as a platform to get knowledge up-date?	74%	9%	16%
Fearlessness is a quality for True Dental Entrepreneur	67%	6%	26%
Adaptability is a quality for true Dental Entrepreneur.	63%	6%	29%
Risk Tolerance/Cushion is necessary before starting Dental Entrepreneurship.	74%	5%	20%
The idea of being your own boss is pleasing.	71%	5%	22%
Are you a dental Entrepreneur?	72%	5%	21%
Have made specific plans to earn	72%	6%	21%
I can pretty much determine what will happen in the future career wise.	71%	5%	23%

Based on frequency, the responses received (Table II), it was revealed that majority of the house officers in twin cities are aware of dental entrepreneurship. Majority of house officers (79%) see themselves pursuing careers after completion of house job, however are concerned about job availability post house job. 85% of house officers were not aware about the lectures that are being conducted about entrepreneurship in dentistry, giving a No or Maybe response, as they are not guided during dental school. 71% of house officers are of the view that dental entrepreneurship should be a part of undergraduate curriculum.

Discussion:

The findings of this research revealed that most of the house officers of the teaching hospitals in twin cities were aware of entrepreneurship and the entrepreneurs in their social circles however only 48% have an idea of dental entrepreneurship opportunities. Regarding awareness was related to the difference between “startups” and “Entrepreneurship”, the results were congruent with the results of a study by Xiashuang Zhang et al as they summed up that many medical students in China weren’t aware about the concept of Entrepreneurship at all, but in a few years they might see an optimistic approach towards Entrepreneurship.¹⁸

Another important finding of this study was that 79% of the young dentists were worried about job availability and had a fear of unemployment and same percentage of young dentists were planning to open their own clinic. This refers to the fact that only about 21% had an entrepreneur intend. Palaskar² in one of the studies raised the job crisis issue among young dentists.

Furthermore, the House Officers weren’t much aware (33%) about the lectures conducted around the world and/or in Pakistan about Entrepreneurship, which marks the importance of starting lecture series/seminars about Entrepreneurship at undergraduate level. The lowest score (45%) regarding awareness was related to the difference between “startups” and “Entrepreneurship”. Nwabeuze et al²⁰ in mentioned that in order to build knowledge and skill on entrepreneurship programs, students must be regularly involved in workshops and training related to it.

In order to teach and make the house officers/students aware about Entrepreneurship, we need to have a constant source which will keep them updated and help them with the awareness, there are many other factors that are to be noted when teaching about an enterprise and its options. Noor et al²¹ in another study

concluded that the students' can built upon their entrepreneurship qualities through strong support from their close ones such as family, peers, teachers & lecturers. Individual characteristics of students like autonomy, competitive aggressiveness and risk taking positively correlates to the students' choice of entrepreneurship course.²²

Upenyu Chiparo²² in his study found that the factors such as gaining employability skills, significant economic contribution, being self-employed and potential growth have no statistical significance in influencing students' choice of entrepreneurship as optional courses.

This study revealed that young dentists are worried about the unemployment. They have an idea about entrepreneurship but only 45% were merely aware of entrepreneurship possibilities in dentistry. Moreover they realize the importance of introducing dental entrepreneurship as a course at undergraduate level.

Strength and limitations:

The study strength was using a reliable questionnaire (0.7 Cronbach's alpha) which was elaborated and written in simple words hence, easy to understand. Another major strength was including all the dental colleges/hospitals of twin cities. Last but not the least, the study had a unique focus which not just collected but was also a source of motivation for participants to look up the entrepreneurship opportunities in dentistry and explore new options.

All the dental colleges of Pakistan can be included in the study, which can increase the weightage of the outcome of this study.

Conclusion

It was concluded that most of the house officers (79%) were worried about limited job opportunities. Though house officers have fair idea about entrepreneurship but their awareness regarding Dental Entrepreneurship options was limited (45%). Moreover they were confused about startups and entrepreneurship options in Pakistan.

They realize the importance of bringing Dental entrepreneurship as a course at undergraduate level.

Ethical Approval

The study was approved by the Institutional Review Board of Rawal College of Dentistry, Islamabad.

Conflict of Interest

No conflict of interest

Authors' Contribution

QZ: Data collection, Reference checking and proof reading.

HGK: Discussion writing, Conception of study, statistical analysis.

SN: Conception of study, Data collection, statistical analysis.

KA: Data collection, Reference checking and proof reading.

MZ: Data collection, Reference checking and proof reading.

MK: Data collection, Reference checking and proof reading.

MA: Data collection, Reference checking and proof reading.

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