

ENTREPRENEURSHIP EDUCATION IN PHARMACEUTICAL CURRICULUM IN TURKEY: EVALUATION OF STUDENTS' OPINIONS ON EDUCATION AND AFTERNATION

Gulbin Ozcelikay, Ankara University

ABSTRACT

Introduction: Universities should make programs to develop their students' entrepreneurial skills in order to be able to meet the changing pharmacy services. In this study, by emphasizing the place and importance of the entrepreneurship course in 45 pharmacy faculties in Turkey in 2022, the students who took the entrepreneurship course were asked to evaluate the education they received, and the entrepreneurial tendencies of the students after the education were tried to be determined.

Methods: The study is a deterministic type of work. The questionnaire form developed by the researchers was applied to the volunteer students who took the course through google forms.

Result: According to the results of the study, 59.4% of the students stated that entrepreneurship education increased their knowledge. But only 6%. 3 of them made an innovative initiative.

Conclusion: The importance of entrepreneurship education in pharmacy faculties has increased in recent years. It is recommended that the training be done practically by seeing more examples and more patient-oriented interventions should be included.

Keywords: Pharmacy School, Pharmacy Education, Entrepreneurship Education.

INTRODUCTION

The Importance of Entrepreneurship Education

A growing body of literature highlights the growing demand for university graduates to have the problem identification, framing, and problem-solving skills necessary to address complex real-world challenges (McLaughlin et al., 2022).

Pharmacists are the most easily accessible health professionals. They are responsible to make sure patients receive correct regimen and use them according to the instruction. Our world is changing, the role of the pharmacist should change as well. Pharmacists need to find new revenue streams to keep pace with the changing health care environment. Developing and implementing new services in pharmacy require entrepreneurial skills and innovative thinking. There is a high demand of innovative approach toward solving new health challenges. This will only be possible if entrepreneurship culture is fostered in Pharmacy schools. Brazeu suggests that fostering entrepreneurial spirit in student pharmacist is vital to advancing health care (Brazeau, 2013). Pharmacy students should be taught entrepreneurial skills and how they can integrate them in their daily practices to improve health outcomes of patients. Current accreditation standard and professional competency outcomes as delineated by the Centre for the Advancement of Pharmacy Education Medina et al. (2013) requires that all student pharmacists

have sufficient exposure and understanding of entrepreneurship and innovation as a way to better accomplish professional goals (Shealy & McCaslan, 2018).

Entrepreneurship in Pharmacy

Some challenges still persist toward realizing the full potential of entrepreneurship in pharmacy practice. Pharmacists have chosen to become dispensers mostly because of human nature. It is the path of least resistance and it provides the highest rewards. It is more comfortable for most pharmacists and therefore there is no pressing need to change or pursue innovation (Mattingly et al., 2019). Whereas, Pharmacy educators have embraced entrepreneurship as a necessary qualification of student pharmacists for over 30 years (Vandel, 1985).

However, with shrinking prescription drug margins, increasing industry regulation, and generic pricing woes, it's harder than ever for an entrepreneur to open or operate a viable independent pharmacy (Hohmeier & Gatwood, 2016).

The word "*entrepreneurship*" can simply be thought of as starting and running an independent pharmacy or business. However, these do not fully describe the word itself. A deeper understanding of entrepreneurship concepts is required to determine how they can be used to advance the profession (Tice, 2005).

In the study conducted to determine the views of pharmacists on the need for entrepreneurship education, it was determined that one group thought that clinical learning should be the main focus. It is thought that it will be useful to give this in pharmacy undergraduate education. There are also mixed views on the timing of entrepreneurship education (Scahill & D'Souza, 2021).

Entrepreneurship is the process of creating value by bringing together a unique package of resources to exploit an opportunity (Stevenson, 2000). In the context of pharmacy, entrepreneurship is generally associated with the establishment of community pharmacy and business management. This can come in many different ways like launching a program to create awareness to the public about health issues, or establishing new kind of health services to the patients to improve their health, or launching a new health care product (Lavery et al., 2015).

Lapkin and Dess describes entrepreneurial orientation in terms of five dimensions: autonomy, innovativeness, risk-taking, proactivity and competitive aggressiveness. The CAPS 2013 education outcomes reinforced Rubino's and Fresman's competency cluster and further specified entrepreneurship recommendation to engage in innovative activities by using creative thinking to envision better ways of accomplishing professional goals (Mattingly et al., 2019).

Proposed definition for the pharmacist entrepreneur construct (Mattingly et al., 2019)

- Identifies, create and pursue new opportunities
- Successfully implements new idea into practice
- Is willing to take risk
- Fill unmet or un recognized needs
- Creates new value through innovation
- Is responsive to changes in healthcare, markets, or other aspects of pharmacy practice
- Is willing to make sacrifices
- Include social entrepreneurship and intrapreneurship
- Leverage existing pharmacy knowledge, skills and resources
- Goes beyond traditional pharmacy practices
- Improves patient care

KOSGEB (Small and Medium Enterprises Development and Support Administration Under the Ministry of Industry and Technology of the Republic of Turkey)

Entrepreneurship Supports: In Turkey, KOSGEB (Small and Medium Sized Enterprise Development and Support Administration Affiliated to The Ministry Of Industry and Technology in The Republic of Turkey), has provided the entrepreneurs with information about establishing and running a business. They help entrepreneur to prepare business model for their business as well as giving training to support them through the process. These trainings are given to support entrepreneurs who want to open a business in traditional sectors (KOSGEB 2022). In 2016, an Innovative Entrepreneurship in Pharmacy course was offered to senior students with a protocol signed between Ankara University Faculty of Pharmacy and the Institution.

In this study, the place of entrepreneurship education in Pharmacy faculties in Turkey will be determined, and the opinions and post-education skills of students who received entrepreneurship education at Ankara University Faculty of Pharmacy will be evaluated.

METHOD

This study is a descriptive study. It was determined by examining the web pages of the faculties that 45 pharmacy faculties that accepted students in Turkey in 2022 have entrepreneurship courses, whether the course is compulsory or elective, which semester and how many hours. In 2016, the elective course “*Innovative Entrepreneurship*”, which can be supported by KOSGEB, was offered to senior students of Ankara University Faculty of Pharmacy. In order to measure the educational impact of the students and the entrepreneurial tendency of the students, the questions created by the researcher were asked by creating a questionnaire.

Approval was obtained for the study with the decision of Ankara University Ethics committee dated 21.12.2021 and numbered 20/225.

The e-mail addresses of the students were requested from the Faculty of Pharmacy Dean's Office and the questionnaire form was sent as a google form in the e-mail environment. The number of students who have taken the course since the first year the course was opened is 225.

A questionnaire was sent to all graduates who attended the course. Informed consent form was prepared and those who voluntarily participated in the study were included. 22 people out of 225 could not be reached. A total of 32 people participated in the study. Since the participants were graduates, there were no conflicts of interest with the researchers. The obtained data were interpreted with SPSS data analysis and the effect of entrepreneurship education on entrepreneurial tendency was discussed.

RESULTS

In the National Pharmacy Education Core Program in Turkey, Entrepreneurship-related competency is at level 2 (applies with resources/guidance/direction or assistance) and as “*uses entrepreneurship education knowledge*”. Entrepreneurship and innovation are extremely important in the pharmacy services. The status of the course related to entrepreneurship in 45 pharmacy faculties in Turkey has been determined by the examining the web pages of the faculties. Accordingly, only 14 out of 45 pharmacy faculties have courses on entrepreneurship. The distribution of these courses is given below Table 1.

Table 1 LIST OF ENTREPRENEURSHIP COURSES IN PHARMACY FACULTIES IN TURKEY (PHARMACY FACULTIES WEB PAGES)			
Subject Name	Semester	Compulsory/ Elective	Number of hours in a week

			Theoretical	Practice
Entrepreneurship in Health	2th	Elective	2	-
Entrepreneurship in Health Science	7th	Elective	2	-
Pharmacy and Innovative Entrepreneurship	9th	Elective	2	2
Entrepreneurship	9th	Elective	2	-
R & D and Innovation in Industrial Pharmacy	9th	Elective	2	-
Introduction to Intelectula Property Right	5th	Elective	2	-
Entrepreneurship and Business Plan	6th	Elective	2	-
Commercialization of Innovation and Entrepreneurship	6th	Elective	2	-
Current Issue in Entrepreneuship	6th	Elective	2	-
Invest Decision Analysis in Entrepreneurship	5th	Elective	2	-
Entrepreneurship and Innovation	9th and 10th	Elective	2	-
Entrepreneurship and Innovation	5th	Elective	2	-
Entrepreneurship and Business Establishment	9th	Compulsory	1	-
Applied Entrepreneurship	9th	Elective	4	-
Entrepreneurship in Pharmacy professional	9th	Elective	2	-
Entrepreneurship	1th	Elective	2	-
Entrepreneurship	2th	Elective	2	-
Entrepreneurship	4th	Elective	2	-
Entrepreneurship	8th	Elective	2	-

Some of the courses are in the form of courses offered jointly through out the university. Some of them are given only to the student of the faculty of pharmacy.

Ankara University Faculty of Pharmacy has opened the "*Pharmacy and Innovative Entrepreneurship*" course as an elective since 2016 for senior students. This course is included in the curriculum as 2 hours of theory and 2 hours of practice. It is the course for students who want to open a business or do different jobs that needs an entrepreneurial character. The course is aimed to give students the ability to make their own business plans in order to increase the possibility of surviving in business and drawing a road map before starting the business they want to do.

At the end of the course it is expected that participants will be able to write a sample business plan. Student who took this course and who were able to prepare a solid business plan are deemed to have received KOSGEB's traditional Entrepreneurship training and are financially supported. Starting from July 2019, KOSGEB entrepreneurship certificates were given independently (KOSGEB).

The subjects' title of the "*Pharmacy and Innovative Entrepreneurship*" course opened at Ankara University Faculty of Pharmacy are given bellow;

1. Basic concepts of Entrepreneurship
2. Seeing entrepreneurship opportunities and creating developing ideas
3. Feasibility analysis
4. Business models, customers, value proposition and sources of income
5. Economy, industry, competition, and customer analysis
6. Legal infrastructure
7. Ethical foundation of enterprise
8. Marketing principle and management
9. Interview with pharmacist and entrepreneurs guests (in order to convey their experience in their entrepreneurship adventures)
10. Preparing a sample business plan

The entrepreneurship tendencies of the students who took the "*Pharmacy and Innovative Entrepreneurship*" course were determined, and the results of the survey on the importance of innovative entrepreneurship education are given below.

During the study among the participants 28% work in the public sector, 34% work in a hospital pharmacy and 38% own a community pharmacy. 72% of them are female, 28% are male. The family income level of 80% of them is medium level while 72% of them do not have any innovative entrepreneurs in their families.

When participants asked concerning the reasons for taking the “*Pharmacy and Innovative Entrepreneurship*” course the following were their responses;

- I think it will be useful for me when the time comes (31.3%)
- In order to receive financial support while opening a pharmacy (31.3%)
- To find out what kind of innovative entrepreneurship I can do in my profession (18.8%)
- The course caught my interest (12.5%)
- To be an innovative entrepreneur (6.3%)

When the contribution of the “*Pharmacy and Innovative Entrepreneurship*” course was evaluated to the participants;

- 6.3% of them were able to make an enterprise,
- 59.4% of them stated that their knowledge in the field of entrepreneurship has increased,
- 28.1% did not make any contribution to them,
- 6.3% of them take innovative initiatives,
- 2% Pharmacy and Innovative Entrepreneurship course does not contribute, but the financial support from KOSGEB is beneficial.
- 90% could not benefit from KOSGEB financial support

The reasons why students could not get the support from KOSGEB beside taking the “*Pharmacy and Innovative Entrepreneurship*” course;

- 22% my own capital was not enough
- 37.5% you are not ready to start your own business yet
- 15.6% could not get support due to bureaucratic procedures
- 25% I gave up starting my own business

How the student who took “*Pharmacy and Innovative Entrepreneurship*” course and those who received support from KOSGEB evaluated this support;

- 3.1% contributed greatly to opening a pharmacy.
- 12.5% of them made a small contribution to opening a pharmacy.
- 3.1% stated that they put a different pharmacy design in their pharmacy including an Arabic and English product screen for foreign patients allowing them to get information about the products in this way stated.

It is understood that only 3.1% made an innovative venture.

Taking the “*Pharmacy and Innovative Entrepreneurship*” course was influential in the fact that only 25% of the participants choose the sector they are currently working in after this course. 31.3% of the participants changed their mind about their working sector after taking the course.

Among participants of the study, 75% of the most important business factors affecting innovative entrepreneurship are business management, 18.8 % are profit making, 6.3% job satisfaction. Behavioral factors are; 31.3% self-efficacy, 15.6% competitive intelligence, 15.6% intrinsic motivation, 12.5% ethical behavior, 6.3% negative social motivation, 6.3% leadership and 3.1% empathy.

The course has impacted 34% of the participants in their innovative entrepreneurship venture and 87.5% were not associating themselves with innovative entrepreneurship and the reason was to not take initiatives with the education.

Suggestion for making innovative entrepreneurship course more effective in pharmacy faculties are given bellow;

- Experience of the innovative entrepreneurs should be included (53.1%)
- Ability to design innovative initiatives should be given (15.6%)

- Students should be brought together with the industry (6.3%)
- The supportive organization and institution should give support to the students while they are in early class (6.3%)
- This course should be given as compulsory course for those who want to open a pharmacy (6.3%)
- The number of students should be reduced in the class (3.1%),
- Lesson hours should be increased (3.1%),
- The course was sufficient (3.1%)

DISCUSSION

The importance of entrepreneurship education is obvious not only in pharmacy faculties but also in other discipline as well. Entrepreneurship education and its training should be codified for easy transfer and adaptation. Regional and local actors should come together to make sure this is happening. Entrepreneurship education and training represents both academic education and formal training intervention that share the broad objective of providing individual with entrepreneurial mind-set and skills to support participation and performance in a range of entrepreneurial activities. (Valerio et al., 2014).

Despite the fact that the debate surrounding whether or not entrepreneurship can be taught continues, there has been much interest in entrepreneurship education over the last couple of decades. Entrepreneurship in both art and science, some aspect of entrepreneurship can be easily taught and some are well learned through practice, can't be taught in the classroom, it is crucial for the faculties to design a programme that provide mixer to achieve the desired outcome (Henry et al., 2005).

In an extracurricular post-activity survey that allowed sophomore Pharmacy students to develop an idea for a new clinical pharmacy service, 96.7% of students agreed that the activity gave them a better understanding of pharmacists' role in creating new clinical services (Mogul et al., 2020).

There are two main ways to increase entrepreneurship in pharmacy students. The first is to identify students with current entrepreneurial interest and enroll them in PharmD programmes. The second is to encourage entrepreneurial interest in pharmacy students. Both are important for the ability to identify and evaluate entrepreneurial attitudes and intentions (Huston, 2018).

The nature of entrepreneurship suggest that the subject is more practical than theoretical as the result most authors agree that experiential learning, or "*learning by doing*," is more effective for developing entrepreneurial skills and attitudes than traditional methods like lectures. Several studies carried out in innovation-driven countries, including Singapore, Sweden and the United Kingdom show that the entrepreneurs learn best with an experiential learning approach (Martínez et al., 2010).

The key to a successful entrepreneurship education is to find the most effective way to manage the teachable skills and identify the best match between student needs and teaching techniques. There is no one universal method of teaching entrepreneurship that suffices all, each one will be compatible in one place and not in somewhere else there is no universal pedagogical recipe to teach entrepreneurship and the choice of techniques and modalities depends mainly on the objectives, contents and constraints imposed by the institutional context (Arasti et al., 2012). In our study, in order to gain entrepreneurship skills, besides the theoretical courses, it was the students' most wanted to see innovative entrepreneurial examples.

Different teaching method that can be adapted on teaching entrepreneurship; case study, group discussion, individual presentation, individual written report, group project, formal lectures, guest speakers, action learning, seminar, web-based learning, video recorded are mostly

used methods. Among them case study is very effective way to teach entrepreneurship, this is because it draw up lessons from other entrepreneurs and act like a guide for the students concerning what to do and what to not. This shorten the path to success and make them avoid unnecessary errors they would have done if they were to start with open mind. (Arasti et al., 2012).

The study has shown that among the student who took the course most of them their knowledge about entrepreneurship has increased and they have been able to prepare full business plan. Despite the fact that most of them are yet to establish innovative venture. For this reason it seems that there were few examples of innovative entrepreneurship during the lesson, there were few individual assignment to prepare business plan and even little group discussion. Although it is not supposed to be only theoretical, more practical lessons are needed.

In a study conducted on pharmacy students in the United Arab Emirates who took a course opened to improve their entrepreneurial thinking and skills, it was found that students developed both interest and confidence to open a pharmacy (Shahiwala, 2017).

It is generally agreed that traditional methods are less effective in encouraging entrepreneurial attributes. It is said that such methods actually make students become dormant participants. These methods prepare a student to work for an entrepreneur, but not to become one (Mwasalwiba, 2010).

A study conducted in the USA determined that there are few articles on entrepreneurship education in pharmacy education (DeVold et al., 2022).

LIMITATIONS

Low number of participants. The results of the training could not be fully evaluated due to the fact that the graduate pharmacists have not made any attempt yet. It can be suggested that such studies should be increased.

CONCLUSION

As a result of newly opened pharmacy faculties in Turkey the number of pharmacists is expected to increase rapidly and it is assumed that in near future pharmacists will have difficult time finding jobs. Therefore, pharmacists need to move away from ordinary thoughts of being pharmacists dispensers and expand their vision for new business models.

Pharmacy faculties in Turkey has shown uniform development as the rest of the world in the increasing capacity of the innovative entrepreneurship. It seems that various courses have been opened for this purpose in some pharmacy faculties. However, almost all of them remain at the theoretical level. According to the results of this study, students want to make more business plan applications and be more together with those who make innovative initiatives in real world.

Therefore, in addition to the courses taught in traditional pharmacy management courses, it should offer additional courses certificate programs or entrepreneurship programs identified with the entrepreneurship, especially in pharmacy context.

It can be said that there are deficiencies in the elective courses on entrepreneurship and innovation opened in pharmacy faculties. In Turkey, as in the rest of the world, this issue should be given importance due to the expectation of developing new service models from pharmacist and the competency in the national pharmacy core education program.

Perhaps by increasing the number of qualifications, entrepreneurship and innovation courses in pharmacy faculties should be developed not only as an elective course but also as a

compulsory course in which business plan studies are increased and by bringing innovative entrepreneurs and students together to develop the vision of the students in this regard.

ACKNOWLEDGMENTS

I would like to thank Saidi Abdallah Mbondela for sharing the pharmacy students' views on entrepreneurship education.

CONFLICT OF INTEREST

There are no conflicts of interest to declare.

FUNDING SOURCES

There were no funding sources, whatsoever, for this study.

REFERENCES

- Arasti, Z., Falavarjani, M.K., & Imanipour, N. (2012). A Study of Teaching Methods in Entrepreneurship Education for Graduate Students. *Higher education studies*, 2(1), 2-10.
- Brazeau, G. (2013). Entrepreneurial spirit in pharmacy. *American Journal of Pharmaceutical Education*, 77(5).
- DeVold, T., Mager, N.D., Ernst, K., Parker, K., Komandt, M., Meadows, A., & Aronson, B.D. (2022). Management, entrepreneurship, continuing professional development, and leadership education in United States doctor of pharmacy curricula: A scoping review. *Currents in Pharmacy Teaching and Learning*, 14(6), 798-808.
- Henry, C., Hill, F., & Leitch, C. (2005). Entrepreneurship education and training: can entrepreneurship be taught? Part I. *Education+ Training*, 47(2), 98-111.
- Hohmeier, K.C., & Gatwood, J. (2016). Toward intrapreneurship in pharmacy education. *American Journal of Pharmaceutical Education*, 80(3).
- Huston, S.A. (2018). Factors associated with entrepreneurial intentions in doctor of pharmacy students. *American Journal of Pharmaceutical Education*, 82(9).
- Lavery, G., Hanna, L.A., Haughey, S., & Hughes, C. (2015). Developing entrepreneurial skills in pharmacy students. *American Journal of Pharmaceutical Education*, 79(7).
- Martínez, A.C., Levie, J., Kelley, D.J., SÆmundsson, R.J., & Schøtt, T. (2010). Global entrepreneurship monitor special report: A global perspective on entrepreneurship education and training.
- Mattingly, T.J., Mullins, C.D., Melendez, D.R., Boyden, K., & Eddington, N.D. (2019). A systematic review of entrepreneurship in pharmacy practice and education. *American journal of pharmaceutical education*, 83(3).
- McLaughlin, J.E., Chen, E., Lake, D., Guo, W., Skywark, E.R., Chernik, A., & Liu, T. (2022). Design thinking teaching and learning in higher education: Experiences across four universities. *Plos one*, 17(3), e0265902.
- Medina, M.S., Plaza, C.M., Stowe, C.D., Robinson, E.T., DeLander, G., Beck, D.E., ... & Johnston, P. (2013). Center for the Advancement of Pharmacy Education 2013 educational outcomes. *American Journal of Pharmaceutical Education*, 77(8).
- Mogul, A., Laughlin, E., & Lynch, S. (2020). A co-curricular activity to introduce pharmacy students to the concepts of innovation and entrepreneurship. *American Journal of Pharmaceutical Education*, 84(8).
- Mwasalwiba, E.S. (2010). Entrepreneurship education: a review of its objectives, teaching methods, and impact indicators. *Education+ training*, 52(1), 20-47.
- Scahill, S.L., & D'Souza, N.J. (2022). The pharmacist as entrepreneur: Whether, how, and when to educate?. *Currents in Pharmacy Teaching and Learning*, 14(1), 5-12.
- Shahiwal, A. (2017). Entrepreneurship skills development through project-based activity in bachelor of pharmacy program. *Currents in Pharmacy Teaching and Learning*, 9(4), 698-706.
- Shealy, K.M., & McCaslan, M. (2018). Incorporating an entrepreneurial certificate into the pharmacy curriculum. *American Journal of Pharmaceutical Education*, 82(8).
- Stevenson, H.H. (2000). Why the Entrepreneurship Has Won! Coleman White Paper, 1-8.

- Tice, B.P. (2005). Advancing Pharmacy Through Entrepreneurial Leadership: By combining principles of entrepreneurship with those of leadership, pharmacists can create value in emerging, innovative pharmacy-based services and products. *Journal of the American Pharmacists Association*, 45(5), 546-553.
- Valerio, A., Parton, B., & Robb, A. (2014). Entrepreneurship education and training programs around the world: dimensions for success.
- Vandel, J.H. (1985). Developing a spirit of entrepreneurship and a managerial attitude in students. *American Journal of Pharmaceutical Education*. 1985 Dec 1;49(4):371-2.

Received: 16-Mar-2023, Manuscript No. AJEE-23-13340; **Editor assigned:** 18-Mar-2023, Pre QC No. AJEE-23-13340(PQ); **Reviewed:** 01-Apr-2023, QC No. AJEE-23-13340; **Revised:** 08-Apr-2023, Manuscript No. AJEE-23-13340(R); **Published:** 14-Apr-2023