

Entrepreneurial skill level and self-perception of international young family doctors: Before and after basic entrepreneurship training



Erfen Gustiawan Suwangto^{1*}

ABSTRACT

Background: Medical doctors lack entrepreneurship training. Thus, we held training that stimulates international young family doctors (in residency training or under 5 years after residency training) based on modification of standardized modules by International Labor Organization (ILO) in late 2019 until late 2020. This study aimed to measure the character readiness of young family doctors in entrepreneurship, review entrepreneurial traits and tendencies, competency clusters are identified, and get input in this training program.

Methods: This research was qualitative research using a descriptive and cross-sectional approach with voluntary sampling involving 32 young family doctors (members of the Asia Pacific World Organization) from end of 2019 to the end of 2020. We tested entrepreneurial skill level and self-perception before and after training. Data collection used structured and semi-structured questionnaires containing close-ended questions. Further data was analyzed to test significance using t test, paired sample test, and K-means to classify.

Results: Most trainees don't know about self-serving disclosure, financial relations, and marketing budget in the medical business. There was a significant difference in the pre-test and post-test scores and we got 2 cluster groups with different values regarding entrepreneurial skills and self-perceptions among participants.

Conclusion: self-perception of young family doctors is not ready to become entrepreneurs, so further understanding of entrepreneurial content is needed. There are eight competencies built in this entrepreneurial training. Two competency clusters based on skill level were obtained.

Keywords: *Young family doctors, entrepreneurial skill, self-perception, entrepreneurship training.*

Cite This Article: Suwangto, E.G. 2024. Entrepreneurial skill level and self-perception of international young family doctors: Before and after basic entrepreneurship training. *Bali Medical Journal* 13(1): 889-894. DOI: 10.15562/bmj.v13i1.5107

¹Family Physicians and Medical Lawyer, Department of Ethics and Medical Law, School of Medicine and Health Sciences, Atma Jaya Catholic University of Indonesia, Jakarta, Indonesia.

*Corresponding author:

Erfen Gustiawan Suwangto;
Family Physicians and Medical Lawyer,
Department of Ethics and Medical
Law, School of Medicine and Health
Sciences, Atma Jaya Catholic University
of Indonesia, Jakarta, Indonesia
erfen.gustiawan@atmajaya.ac.id

Received: 2023-12-02

Accepted: 2024-01-22

Published: 2024-02-27

INTRODUCTION

An initiative in social entrepreneurship, like establishing a primary care clinic, represents a substantial undertaking that can enhance various aspects of a primary care physician's work, including research, pilot projects, and mentoring junior colleagues.¹ In the era of the Fourth Industrial Revolution, primary care clinics integrated with advanced technology can transform primary care doctors into technopreneurs. The progress in biomarker screening technology, which can now be integrated with electronic devices such as mobile phones, along with the development of diagnostic algorithms based on artificial intelligence and the expansion of telemedicine, presents significant advancements. These advancements create opportunities for primary care doctors to devise

and implement preventive strategies. Entrepreneurship training programs that cultivate various primary care business models will be essential to address the gap by encouraging primary care doctors to venture into entrepreneurship.² These training sessions will inspire primary care doctors with new ideas and guide them in crafting basic business plans. Through ongoing assignments and support, they will be continually motivated to implement and refine their business strategies.³

The field of entrepreneurship presents one of the most intriguing and demanding opportunities for young doctors, and it deserves support from organizations like the World Health Organization, the World Organization of Family Doctors (WONCA), governments, and private sectors alike. Several mechanisms exist to bridge the gap between the academic and business realms, aiming to optimize

the success of health technology (health tech) start-ups by enhancing researchers' understanding of business operations. Existing solutions provide only a partial remedy and encompass initiatives like hosting venture capital (VC) panels during medical conferences. These VC panels serve to educate academics on two vital and interconnected aspects: how to effectively present their ideas in the business realm and what factors to contemplate when establishing a company. The integration of VC panels into academic conferences could also underscore the importance of integrating pertinent business education within academia.

Medical doctors lack entrepreneurship training. Thus, we held training that stimulates international young family doctors (in residency training or under 5 years after residency training) based on modification of standardized modules by

International Labor Organization (ILO) in late 2019 until late 2020. The authors evaluated classroom entrepreneurship training that has been running, measured the character readiness of young family doctors in entrepreneurship, definitions and examples of entrepreneurial traits and tendencies are reviewed in both professional and academic literature sources, and competency clusters are identified. Another aim is to get input in this training program. So that this research can be used as a reference in integrating entrepreneurship material into the primary care residency curriculum.

MATERIAL AND METHODS

Subject and Study Design

This research was qualitative research using descriptive and cross-sectional approaches with voluntary sampling methods involving 32 young family doctors (members of the Asia Pacific World Organization) from the end of 2019 to the end of 2020. The inclusion criteria were young family doctors (member of the Asia Pacific World Organization) who volunteered to take part in this training, fill the pre-test, and or post-test. The exclusion criteria were those who were not young family doctors. The research sample consisted of 23 control group samples (who completed the pre-test without taking part in the training or did not complete the training so they did not take the post-test), and 9 paired samples who successfully completed the training. This research has received approval from the Research Ethics Committee of Faculty of Medicine Atma Jaya Catholic University. Verbal consent was taken from study participants. The confidentiality of respondents will be guaranteed.

Training and Research Procedure

This training takes the form of an online course which is carried out by making an open announcement on the official social media for Asia Pacific Young Family Physicians. In this training, learning activities are carried out by guiding with a modified module from the International Labor Organization's entrepreneurship module to create a journal of participants' progress at each meeting. The entrepreneurship module is

examined and judged by two (2) experts (a hospital administrative management expert and medical education expert). The method for measuring the entrepreneurial character of young family doctors is by developing a questionnaire from the results of questions with a reverse feedback system. In addition to group assignments, lectures, experiential exercises such as role-plays and simulation games, case studies, and reflection papers are the primary classroom techniques used. During class, the teacher makes journal notes to be able to track observations of events that occur in the classroom and responses afterward. The researcher collected all the data and analyzed it. Data collection using closed questionnaires was carried out in a structured and semi-structured manner according to the research objectives and instruments. The 19 questionnaire statements were developed from eight entrepreneurial competencies, namely decision making,⁴ strategic thinking,⁵ risk-taking,⁶ building self-confidence,⁷ communicating ideas,⁸ motivating team members,⁹ tolerance for ambiguity,¹⁰ internal locus of control.¹¹ The questionnaire was tested by the alpha Cronbach Test and all the indicators are had high reliability, the value more than 0.7. Variable measure were used to scale agreement or disagreement, whose level of agreement increases with number.

Statistical Analysis

The researcher collected all the data and analyzed it using descriptive analysis for the characteristics of research subjects. The comparison test was carried out using a dependent t-test and a paired sample test. Meanwhile, for the skill level cluster, we used K-Means.

RESULTS

Table 1 shows the distribution of subjects based on demographics (gender, age, country), background of training participants, previous entrepreneurship training, status as a business owner. The percentage of male and female participants in this training is the same at 50%. Most of the trainees participating in this research were 29-38 years old (44%). Ten of the trainees participating (31%) were residents of family medicine specialists. They were

from some Asia-Pacific countries. The largest percentage of the total participants was Indonesia (44%), followed by Malaysia (22%) and Myanmar (13%). Most of the trainees who participated (72%) did not have entrepreneurship training before and 53% of trainees did not own a business. Most trainees have heard of the pharmaceutical code, fraud guide, conflict guide. This data shows that the trainees need more familiarity about ethical codes in medical business. Almost half of trainees participating don't know financial relations and marketing budget in the medical business. Furthermore, 54% of trainees participating don't know self-serving disclosure in medical business. Figure 1 shows that most of the trainees strongly agree that medical businesses need a legal motive and a common good motive. This means that a legal motive and a common good motive is important in the medical business. Meanwhile, because of the patient's motive importance in the medical business, the trainees agree slightly.

Table 2 shows the results of the reliability test on the question indicator, and all the indicators had high reliability. The test result has a Cronbach's alpha value of more than 0.7. Figure 2 shows that it was also known that the instruments for motivating team members, internal locus control and building trust had good scores. Other instruments with average/intermediate scores were strategic thinking, decision making, and communication ideas. The participants had an average level of confidence in their entrepreneurial skills. Thus, the confidence of these young doctors to become entrepreneurs should be a concern for improvement. In addition, risk taking and tolerance of ambiguity instruments had lower scores than other instruments. These two instruments need to be taken into consideration for improvement so young family doctors can be good entrepreneurs. It is because running a business will face a lot of unexpected things that need to take risks and make decisions in a short time.

Based on the Table 3 cluster results obtained, cluster 1 consists of training participants with high scores on the instruments and cluster 2 consists of training participants with lower scores

Table 1. Respondents' demography

	Frequency(N)	Percentage (%)
Gender		
Male	16	50
Female	16	50
Age		
19 - 28	7	22
29 - 38	14	44
39 - 48	5	16
49 - 58	2	6
59 - 68	2	6
No Answer	2	6
Trainees Background		
Resident of Family Medicine	9	28
Family Medicine Specialist	10	31
Bachelor in Medicine	5	16
Medical Student	3	9
Other Medical Specialists	3	9
Resident of Other Specialties	1	3
Medical Student, Bachelor in Medicine	1	3
Country		
Dominican Republic	1	3
Mongolia	1	3
Nepal	1	3
Philippines	1	3
Tunisia	1	3
Malaysia	7	22
Myanmar	4	13
Indonesia	14	44
South Africa	1	3
Pakistan	1	3
Past Entrepreneurship Training		
Yes	4	13
No	23	72
Not Answer	5	16
Status as Business Owner		
Yes	10	31
No	17	53
Not Answer	5	16
Total	32	100%

than cluster 1 on all instruments. Cluster 1 members are the 5 training participants with the top results, while the other participants are members of cluster 2. In the control group and pre-test, it showed in [Table 4](#) that the result was not significant. This means that this training did not have a significant impact on participants who did not attend this training to completion. The test results show that the post-test data has a higher value than the pre-test. However, the distribution range

of test results is also getting wider and the standard error is getting higher. The significant value of the pre-test and post-test results changes significantly. This means that entrepreneurship training carried out is very useful, improving skills in the medical business.

[Figure 3](#) shows most of the trainees chose topics about health care delivery systems, business aspects of medicine, and physicians as owners of intellectual property data, and physicians as owners

of medical practices as topics of interest in medical business ethics for future training.

DISCUSSION

This study measures the character readiness of young family doctors in entrepreneurship. Based on the results, most participants are not ready to face or to become entrepreneurs. It's a shame because the medical business still has great opportunities. This can be seen from their business ownership and knowledge of entrepreneurial content. The finding participants had heard about entrepreneurial content but were not yet familiar with it, so this training was important to increase participants when taking part in running a health business. Based on the results, young family doctors need to learn a lot about finance and marketing budgets.

We synthesized entrepreneurial characteristics and inclinations by reviewing literature on entrepreneurship across various sectors, including healthcare, as well as drawing from our own practical experience in the field. The characteristics linked with entrepreneurial behavior were identified through a comprehensive literature review. References from both business and social science disciplines, along with sources directly related to healthcare, were carefully chosen for the literature review. Through this review, a method was established to pinpoint the eight competencies.

Healthcare managers should adopt a more entrepreneurial mindset when making decisions.⁴ Strategic thinking is another competency that emerges consistently in the literature on entrepreneurship. Clinicians are encouraged to cultivate an entrepreneurial mindset that prioritizes strategic development.⁵ Risk assessment is a fundamental aspect of strategic planning, and risk-taking is a pivotal characteristic of entrepreneurship.⁶ Enterprises led by entrepreneurs can gain advantages, as evidenced by a study showing that entrepreneurs with high self-assurance facilitated faster company growth.⁷ Entrepreneurs need to effectively communicate their ideas to garner support. According to a nurse executive, effective communication of ideas and concepts

Table 2. Questionnaire indicator reliability test

Indicator	Result Cronbach's Alpha Test
Confidence Building 1 (I am confident in my ability to communicate ideas and concepts to others)	0.796
Tolerance of Ambiguity 1 (Many of our most important decisions are based on insufficient information)	0.789
Decision Making 1 (I have a tough time making decisions)	0.788
Confidence Building 2 (When something is not right, I am likely to be one of the first to jump in and try to change it)	0.792
Tolerance of Ambiguity 2 (It is more fun to tackle a complicated problem than a simple one)	0.793
Decision Making 2 (I often feel that I have little influence of the direction my life is taking)	0.808
Internal Locus of Control 1 (I am in control of my own destiny)	0.789
Strategic Thinking 1 (I am not very strong on strategic planning)	0.826
Tolerance of Ambiguity 3 (I prefer what I am used to compared with what is unfamiliar)	0.804
Strategic Thinking 2 (I am well organized)	0.798
Decision Making 3 (I take a "can do" approach to all challenges)	0.79
Communicating Idea 1 (I'm not very diplomatic when it comes to sticky situations)	0.81
Risk Taking 1 (I am very good at identifying opportunities.)	0.797
Motivating Team Member 1 (I have an easy time getting to know new people.)	0.805
Confidence Building 3 (It is very likely that I will own my own business one day)	0.796
Motivating Team Member 2 (I am a team player)	0.807
Internal Locus of Control 2 (Success is mostly dependent on hard work and ability)	0.794
Risk Taking 2 (Rarely do I take risks)	0.797
Communicating Idea 2 (I am confident in my abilities to motivate and inspire others)	0.803

is deemed essential for entrepreneurial nurses.⁸ Entrepreneurs can inspire collaboration among others by establishing shared meanings and identities.⁹ It's undeniable that the healthcare industry aligns with this characterization. Entrepreneurs are often noted for their significant tolerance for ambiguity.¹⁰ The significance of having an internal locus of control for entrepreneurs was highlighted, with findings suggesting it to be more crucial than achievement needs.¹¹ After we know about entrepreneurial behavior and tendencies, we know and can place treatment training according to the characteristics of the respondents, so that the research objectives can be achieved.

In addition, further training participants choose topics about health care delivery systems, business aspects of medicine, physicians as owners of intellectual property data, and physicians as owners of medical practices as topics of interest in medical business ethics. Based on the data result, most of the training participants answer the questionnaire statement slightly agree, and some of them are neutral about the statement. This reinforces the alleged gap that exists in stimulating primary care physicians to become entrepreneurs. This is an opportunity for primary care physicians to develop advanced technological prevention strategies in primary care

clinics.

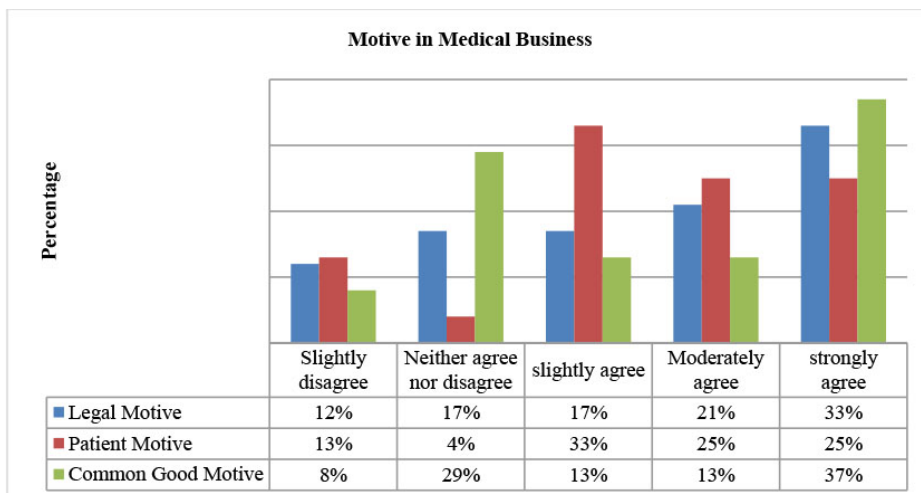
Based on the result, it is known that there are 2 competency clusters of participants, where the first cluster of participants include training participants with high scores, namely the top 5 scores. The first cluster has higher values on all instruments. While the second group is participants whose scores are below the first cluster on all instruments. We found that those with high scores were those who had previously attended entrepreneurship training and or had a business. This is in line with the results that the entrepreneurship training carried out is very useful for improving skills in the medical business.

Table 3. Final cluster centre's

Instrument	Cluster		Sig
	1	2	
Confidence Building 1	6.00	5.31	0.095
Tolerance of Ambiguity 1	6.20	4.23	0.003
Decision Making 1	6.00	4.15	0.001
Confidence Building 2	5.60	4.54	0.013
Tolerance of Ambiguity 2	5.80	4.23	0.015
Decision Making 2	4.20	3.15	0.229
Internal Locus of Control 1	6.00	4.92	0.025
Strategic Thinking 1	4.60	4.00	0.465
Tolerance of Ambiguity 3	5.40	4.00	0.050
Strategic Thinking 2	5.60	4.77	0.035
Decision Making 3	5.40	4.15	0.035
Communicating Idea 1	5.20	4.23	0.014
Risk Taking 1	5.60	5.08	0.306
Motivating Team Member 1	5.60	4.77	0.128
Confidence Building 3	5.40	5.23	0.710
Motivating Team Member 2	5.60	5.08	0.337
Internal Locus of Control 2	6.40	5.08	0.048
Risk Taking 2	4.60	4.08	0.410
Communicating Idea 2	5.00	4.85	0.756

Table 4. Statistic testing on group

Group	N	Mean	Std Dev	Std. Error Mean	Sig
Control	23	90,5652	12,17608	2,53889	0,371
Pre test	9	86,5556	8,12575	2,70858	0,292
Post test	9	86,5556	8,12575	2,70858	,028
Pre test	9	95,3333	13,94633	4,64878	

**Figure 1.** Importance of motives in medical business.

However, this study has limitations. This study only focuses on volunteers of young family doctors who join entrepreneurship training. Output regarding the participant's country of origin may not reflect the characteristics of the participant's country of origin. This is due to its uneven distribution. Participants

who take part in this training mean that they have taken good steps in realizing the importance of entrepreneurial knowledge. Future research can increase the number of participants and ensure that participants who take part can complete the process, thereby producing new findings.

CONCLUSION

This study concluded that most young family doctors are not ready to become entrepreneurs, so further understanding of entrepreneurial content is needed. There are eight competencies introduced in this entrepreneurial training. From this entrepreneurial training, two competency clusters participants were obtained, each cluster distinguished by a high score test and a lower score test in all competencies. This training provides good results in increasing knowledge about entrepreneurship in the medical field.

ACKNOWLEDGEMENTS

I want to express my deep gratefulness to Prof. Darryl Macer and AUSN professors as my research supervisor, for their patient guidance, enthusiastic encouragement and useful critiques of this research work. I would also like to thank Mrs. Choriah M.K for her advice and assistance in keeping my progress on schedule.

CONFLICT OF INTEREST

The author confirms there is no conflict of interest in this journal research.

ETHICAL CONSIDERATION

This research has received approval from the Research Ethics Committee of Faculty of Medicine Atma Jaya Catholic University No: 10/04/KEP-FKIKUJ/2019. Verbal consent was taken from study participants. The confidentiality of respondents will be guaranteed.

FUNDING

This study was supported by funding from Atma Jaya Catholic University Indonesia. The authors had access to all the study and those funding sources had no involvement nor influence on the content of the manuscript.

AUTHOR'S CONTRIBUTION

EGS responsible for concept and design of the study, definition of intellectual content, literature search, clinical studies, data acquisition, data analysis, statistical analysis, manuscript preparation,

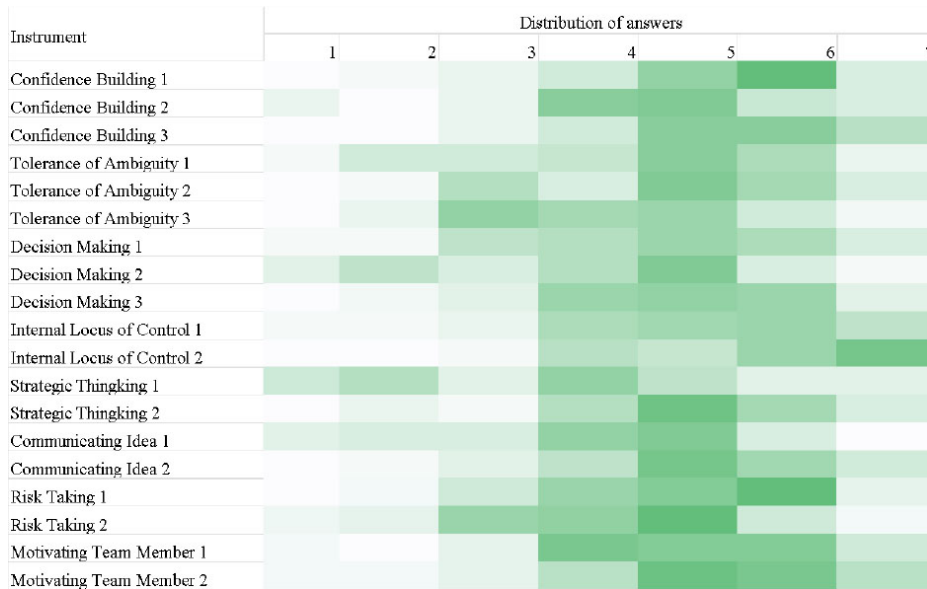


Figure 2. Distribution of participants' answers based on instrument.

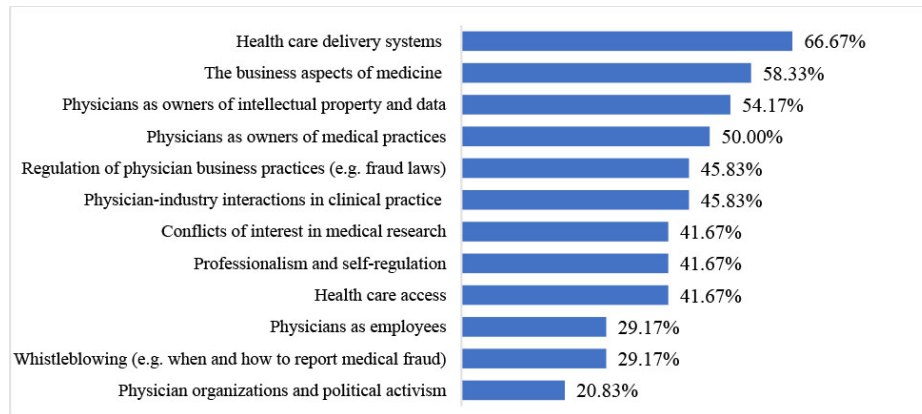


Figure 3. The most interesting medical business ethics theme (control group).

manuscript editing, manuscript, review, and guarantor of the study.

REFERENCES

- Meyer G. Dale. The reinvention of academic entrepreneurship. *Journal of Small Business Management*. 2011;49:1-8.
- Miron-Shatz T, Shatz I, Becker S, Patel J, Eysenbach G. Promoting business and entrepreneurial awareness in health care professionals: lessons from Venture Capital Panels at Medicine 2.0 Conferences. *Journal of Medical Internet Research*. 2014;16(8):e184.
- Cantor JC, Baker LC, Hughes RG. Preparedness for practice. *Young physicians' views*

- of their professional education. *JAMA*. 1993;270(9):1035-40.
- Lauer C. Follow your instincts. *Modern Healthcare*. 2003;33:24.
- Grodzki L. *Building Your Ideal Private Practice: A Guide for Therapists and Other Healing Professionals*. W. W. Norton & Company; 2000.
- Lewis B. If the entrepreneur's hat fits, learn your company's needs before wearing it. *InfoWorld*. 1997;19:80-1.
- Singh S. Personality characteristics, work values, and life styles of fast and slow progressing small-scale industrial entrepreneurs. *Journal of Social Psychology*. 1989;129:801-6.
- Parker M. The new entrepreneurial foundation for the nurse executive. *Nursing Administrative Quarterly*. 1998;22:13-22.

- Fligstein N. Social skill and institutional theory. *American Behaviorist Scientist*. 1997;40:397-405.
- Grousbeck H. What it takes to run your own show. *Christian Science Monitor*. 1997;89:9.
- Peterman NE, Kennedy J. Enterprise education: Influencing students' perception of entrepreneurship, entrepreneurship theory and practice. *Entrepreneurship Theory and Practice*. 2003;28:129-44.



This work is licensed under a Creative Commons Attribution