

# Research on the Innovation and Entrepreneurship Awareness of Medical Students under the Strategy of “Healthy China”

Xiashuang Zhang<sup>1</sup>, Yueying Zhao<sup>1</sup>, Zhuting Xiao<sup>1</sup> and Hongying Zhang<sup>2,\*</sup>

<sup>1</sup>*School of Public Health, Chengdu Medical College, Chengdu, China, 610500;*

<sup>2</sup>*School of Marxism, Chengdu Medical College, Chengdu, China, 610500*

*\* Corresponding author: Hongying Zhang, E-mail: 365973885@qq.com.*

## ABSTRACT

This thesis investigates the current situation and problems of medical students' innovation and entrepreneurship awareness under the strategy of “Healthy China”, analyzes the causes of the existing problems, and then puts forward effective ways to cultivate the innovation and entrepreneurship awareness of medical students. This study, first surveyed 426 medical college students in Sichuan Province with a questionnaire to investigate the current situation in the cultivation of students' innovation and entrepreneurship awareness. The data collected by questionnaires were processed by SPSS, and the factors that influence the students' awareness were analyzed. Due to the influence of heavy burden in study, fund shortage, narrow entrepreneurial approach, unsystematic training guidance, and inadequate publicity of the medical school, the students are weak in innovation and entrepreneurship awareness, which needs to be improved and strengthened. Proper guidance and sufficient support from the government, society and school, especially the systematic training and practical guidance of innovation and entrepreneurship from the medical school, are needed to enhance the innovation and entrepreneurship awareness of medical students. Based on students' expertise, they are encouraged to make full use of their time and resources, broaden their source of raising funds, expand their scope of entrepreneurship and enhance their intention of entrepreneurship.

**Keywords:** *Medical students; Innovation and Entrepreneurship; Health care; Investigation*

## 1. INTRODUCTION

With the proposal of "Healthy China 2030" planning outline, "healthy China" has become a national strategy, aiming to promote the innovation and reform mode of "government, enterprise, learning and research", so as to accelerate the development of medical and health industry [1]. Working in a medical college, we should keep pace with the times, actively carry out innovation and entrepreneurship education for medical students, and cultivate more medical talents with innovative spirit and entrepreneurial ability [2]. Through the analysis of the existing problems and causes in Medical College Students' awareness of innovation and entrepreneurship in Sichuan Province, this study aims to provide a reference for medical college students to improve their awareness of innovation and entrepreneurship with the proposal of solutions and ways to the problems.

## 2. RESEARCH BACKGROUND AND METHODS

With 426 medical college students, from fall 2019 to spring 2020, from Grade 2015 to Grade 2019 in Sichuan Province as the research subjects, a questionnaire survey was done to investigate students' awareness of innovation and entrepreneurship. Six invalid questionnaires were removed and 420 questionnaires were valid with 98.59% effective rate of the questionnaire (Table 1 for the basic information of the subjects). The research subjects were randomly divided into two groups according to whether the students participate in the training activities for innovation and entrepreneurship awareness: one group has received awareness training with the number of 289; the other group did not receive awareness training with the number of 131. The differences in innovation and entrepreneurship awareness between the two groups were analysed.

**Table 1.** Questionnaire basic information

Information	Number	Percentage(%)
Male	140	33.33
Female	280	66.67
Freshmen	28	6.67
Sophomore	99	23.57
Junior	109	25.95
Senior	167	39.76
Fifth grade	17	4.05

This questionnaire is a self-made on innovation and entrepreneurship awareness of medical students, which consists of three parts: (1) their willingness, choice, cognition and purpose of innovation and entrepreneurship; (2) the development of training activities for innovation and entrepreneurship awareness in a Medical University; (3) the influencing factors of innovation and entrepreneurship for medical students. The original data was input with EpiDate 3.1, and then analysed with software SPSS 26.0. Qualitative data such as the basic information of the research subjects, the training activities and its related influencing factors are shown as follows with the number of cases (%); The rank sum test was carried out on the training activities of innovation and entrepreneurship awareness and the students' intention of innovation and entrepreneurship, with the test level  $\alpha = 0.05$ .

**3. RESULTS ANALYSIS AND DISCUSSION**

**3.1. The cultivation of medical students' new entrepreneurial consciousness**

Medical students' understanding of innovation and entrepreneurship policies shows how many college students know innovation and entrepreneurship activities and how much they understand national supportive policies. The survey showed that 6.43% of medical students knew the policies very well, 64.52% were not fully informed of the policies, and 29.05% did not know the country's policies on innovation and entrepreneurship at all (Table 2).

**Table 2.** Students' understanding of the policies

Understanding Degree	Number	Percentage (%)
Very well	27	6.43
Some degree	271	64.5
None	122	29.05

This study investigated medical students' attitudes towards participation in the cultivation of innovation and entrepreneurship awareness and their relevant activities. 14.76% of medical students thought that it was essential to carry out training activities; 70.71% of them believed necessary to do so, 13.81% being optional, and 0.71% believing unnecessary. 7.14% of students felt that training activities were often carried out, and 60.49% felt that such

activities were held less than often, while 25.95% felt that the training activities were held occasionally, and 5.23% felt that the training activities were rarely held, and 1.19% felt that schools did not carry out the training activities. Among those who participated in the training activities, 48.57% participated in lectures given by experts and professors, 61.19% in lectures given by successful people, 35.71% in practical skills training, 31.42% in innovation and entrepreneurship planning contests, and 27.38% in other activities.

**Table 3.** Necessity of holding innovation and entrepreneurship training activities

Necessity	Number	Percentage(%)
Very necessary	62	14.76
Necessary	297	70.71
Optional	58	13.81
NO need	3	0.71

**Table 4.** Frequency of innovation and entrepreneurship awareness training activities

Frequency	Number	Percentage(%)
Always	30	7.14
Often	254	60.49
Occasionally	109	25.95
Rarely	22	5.23
None	5	1.19

**3.2. Current situation of innovation and entrepreneurship consciousness of medical students**

12.86% of the students are confident in the prospects of innovation and entrepreneurship; 52.62% of them feel stressed for the prospects, 25.24% are puzzled about the prospects; 9.28% students regard it as a kind of gambling. 8.10% of the students plan to carry out innovation and entrepreneurship projects for their future career planning; 21.91% of them are ready to go to a company or enterprise, 14.29% being ready to apply for civil servants, 32.38% choosing medical and healthcare units for employment, 21.18% being ready to continue their studies, 2.14% never thinking about it.

**Table 5.** Analysis of prospects

Types	Number	Percentage(%)
Confident	54	12.86
Stressed	221	52.62
Confused	106	25.24
Gambling	39	9.28

**Table 6.** Medical students' plans for future careers

Options	Number	Percentage (%)
Innovation and entrepreneurship	34	8.10
Company or enterprise	92	21.91
Civil servants	60	14.29
Employment in medical and health units	136	32.38
Further studies	89	21.18
Not considered	9	2.14

**3.3. The influence of training activities on students' intention of innovation and Entrepreneurship**

College students are divided into two groups based on whether they have participated in training activities for innovation and entrepreneurship awareness, and then subdivided into five groups according to their level of interest: very interested, relatively interested, general, not very interested, not interested at all. Rank sum test shows statistically significant difference ( $P < 0.05$ ), which indicates that training activities have an impact on students' interest in innovation and entrepreneurship. According to the findings, the average rank of training activities is 193.94(55079 / 284), and the average rank of the training activities without innovation and entrepreneurship awareness is 245.08 (33331/136). It can be concluded that carrying out training activities for innovation and entrepreneurship awareness can enhance students' interest in innovation and entrepreneurship.

**Table 7.** Influence of "consciousness training" on "interest level"

Degree of interest	Number of people			Average rank
	Carry out innovation and entrepreneurship awareness training activities	No training activities for innovation and entrepreneurship awareness	Total	
Very	20	3	23	12
relatively	176	61	237	142
General	70	54	124	322.5
Less	13	16	29	399
No	5	2	7	417
Total	284	136	-	

$P < 0.05$

**3.4. Reasons for medical students to choose innovation and entrepreneurship**

7.86% of medical students think that entrepreneurship is to solve employment; 30.24% of medical students think that innovation and entrepreneurship is to obtain more wealth; 38.10% of medical students think that innovation and entrepreneurship is to challenge themselves, exercise and improve their ability; 14.76% of medical students think that innovation and entrepreneurship is to achieve self-worth; 8.33% of medical students think that innovation and entrepreneurship is to do what they like, and 0.7 1% of medical students think that innovation and entrepreneurship have other meanings. 17.38% of medical students think that they will choose innovation and entrepreneurship only when they cannot find a job, while 40.71% of medical students think that they will choose innovation and entrepreneurship when their work unit is not ideal; 34.05% think that innovation and entrepreneurship projects are also their own interests, and 2.86% of medical students will choose innovation and entrepreneurship directly, and only 5.00% thought they would not choose to start a business.

**Table 8.** The purpose of innovation and entrepreneurship of medical students

Purposes	Number	Percentage(%)
Employment	33	7.86
Wealth	127	30.24
Challenge	160	38.10
Self-worth	62	14.76
Liking	35	8.33
Other meanings	3	0.71

**Table 9.** When will Medical students choose innovation and entrepreneurship

Reasons	Number	Percentage (%)
Unemployed	73	17.38
Unsatisfied with the present job	171	40.71
Interested project	143	34.05
Direct entrepreneurship	12	2.86
Not direct starting a business	21	5.00

**3.5. Factors influencing the cultivation of innovation and entrepreneurship awareness of medical students**

According to the survey, the factors influencing the cultivation of innovation and entrepreneurship awareness of medical students are as follows: 22.38% lack of time, 36.67% lack of money, 32.86% lack of entrepreneurship, which are the main obstacles for medical students to face the practice of innovation and entrepreneurship; 83.77% lack of systematic training and guidance, 56.90% lack of publicity, which are the factors affecting the cultivation of innovation and entrepreneurship awareness of medical students.

**Table 10.** Factors influencing the cultivation of innovation and entrepreneurship consciousness of medical students

Factors	Number	Percentage(%)
No time because of schoolwork	94	22.38
Lack of funds and worrying about failure	154	36.67
No entrepreneurial path	138	32.86
Lack of systematic training guidance	322	76.67
Insufficient publicity	239	56.90

**4. SUGGESTIONS**

**4.1. Rational use of resources to increase entrepreneurial opportunities**

Due to the increase in employment competition and the continuous increase of enrollment in major colleges and universities, the contradiction between the employment of college students and social needs has gradually become more prominent. At the same time, due to the particularity of the medical profession, the employment prospects of medical students are not optimistic, and the job choice is narrower. The increasing number of medical and health practitioners year by year has saturated the social positions of related industries and the academic and experience requirement of each unit is more and more demanding, so fresh graduates are often in an unfavorable condition in job-hunting. Consequently, many graduates choose entrepreneurship. However, at present, both financing and other conditions for college students' innovation and entrepreneurship are not optimistic. The contradiction between a large number of entrepreneurial projects and limited financing channels increases the competition for college students' entrepreneurship, and it is just because of such pressure that many medical students with an interest

in entrepreneurship are afraid of failure and a series of risks brought about by failure. Therefore, some innovation and entrepreneurship projects die in the middle of the road and fail to be solved. In order to alleviate the employment pressure and broaden the employment channels, medical colleges and individual medical students can start with national and local policies to seek various policy support conducive to innovation and entrepreneurship activities. For example, in recent years, some places have issued policies such as special funds for innovation and entrepreneurship, patent subsidy, risk assistance, entrepreneurship subsidy, VAT refund, enterprise income tax reduction and business tax reduction to increase the support for innovation and Entrepreneurship of college students. Colleges and universities should also encourage medical students to engage in innovation and entrepreneurship activities related to "medical care and health" in terms of national development needs, market demands and their own professional advantages, so as to enhance their core competitiveness and increase employment opportunities.

**4.2. Active guidance of the society to form a good environment**

General Secretary Xi Jinping once pointed out: "we must create a favourable environment for innovation and entrepreneurship creation" [3]. College students are full of vitality, passion and reform and innovation spirit. Through the active guidance of society and school, college students can be encouraged and supported to carry out innovation and entrepreneurship. This is not only conducive to the cultivation of a large-scale innovative young army, but also the promotion of scientific and technological innovation and economic and social development in China. However, the current medical college students are lack of innovation and entrepreneurship awareness and motivation due to professional constraints, heavy academic pressure and lack of market and other factors. Therefore, the society and schools can expand the publicity of the "healthy China" strategy, improve the medical students' cognition and understanding of the strategy to help students further understand the connotation and significance of great health and form a good sense of innovation and entrepreneurship, and thus devote themselves to the practice of innovation and entrepreneurship. The risks of innovation and entrepreneurship, the difficulty of funding, and the high ability requirements often put fresh medical graduates into a dilemma.

**4.3. Precise help from the school to maintain entrepreneurial enthusiasm**

At present, with "health" increasingly becoming an important topic at home and abroad, international and domestic attention to "health" and "health industry" is getting higher and higher. However, due to the limitation

of the professional nature of medical students, some medical colleges and universities have not integrated the concept of innovation and entrepreneurship education into the teaching system of medical colleges and universities. The lack of training on the cultivation of innovation and entrepreneurship awareness of medical students, to a certain extent, has affected medical students' passion for innovation and Entrepreneurship. All these results in the weakness of innovation and entrepreneurship awareness of medical students and the lack of innovation and entrepreneurship motivation. Therefore, medical colleges and universities should conform to the trend of world health development, and increase the propaganda of "healthy China" strategic education. With these efforts, medical students can give full play to their professional advantages, constantly improve their own business planning based on a comprehensive understanding of the national health strategy, maintain their enthusiasm for business, and finally grasp market opportunities. Depending on various training bases, the school can carry out systematic training for medical students who are willing to start a business through the combination of "invite in" and "go out"; it can also set up a medical student innovation and entrepreneurship tutor group to carry out innovation and entrepreneurship diagnosis for start-ups, promote the gradual growth of enterprises, and improve the success rate of innovation and Entrepreneurship of medical students. Of course, innovation and entrepreneurship education in medical colleges and universities is a long-term process. How to effectively combine the innovation and entrepreneurship education with medical health, and fully realize the national talent training goal is an important aspect of the reform of medical colleges and universities.

## 5. CONCLUSION

To sum up, the cultivation of innovation and entrepreneurship awareness of medical college students in Sichuan Province is still not optimistic. But with the boom of "mass entrepreneurship and innovation", many passionate, enthusiastic, talented and potential entrepreneurial students have emerged. Especially in recent years, with the influence of "Internet plus" College Students' innovation and entrepreneurship competition, Challenge Cup and youth entrepreneurship competition, medical students' awareness of innovation and entrepreneurship has been enhanced, and they have participated in innovation and entrepreneurship activities. The enthusiasm is gradually increasing, and some students have even succeeded in entrepreneurship. It is believed that under the continuous stimulation of national policies and

social vitality, medical colleges and universities will also pay close attention to the cultivation of innovation entrepreneurship awareness and ability of medical students to enhance their innovation spirit and practical ability, and eventually help them realize their "entrepreneurial dream".

## ACKNOWLEDGMENT

Firstly, I would show our sincerest appreciation to our superior for his encouragement, support and help. His help and encouragement assist me to overcome the difficulties in my writing and finally to accomplish my paper. Secondly, our gratitude goes to colleagues for their valuable suggestions for providing me with rich and useful materials which help me conduct my study. Thank them all again!

Sichuan Provincial College Student Innovation and Entrepreneurship Project(No. 201813705082); National College Student Innovation and Entrepreneurship Project (No.201913705025; No.201913705015X); Sichuan Provincial College Student Innovation and Entrepreneurship Project (No.S201913705075); Internet Ideological and Politics Education Research Center Project Chengdu Medical College(No.WYZX1805).

## References

- [1] Qi Shaohan, GuoRui. Current situation and demand analysis of entrepreneurship education for medical college students [J]. Chinese Journal of Social Medicine, 2017 (4): 335-338.
- [2] Wu Jinping, Zhang Cui. Research on the Path of Medical Students 'Entrepreneurial Consciousness and Ability Education under the Background of Healthy China [J]. Journal of Jinzhou Medical University (Social Science Edition), 2019,17 (2): 26-28.
- [3] Commentator of Fujian Daily: create a favorable development environment conducive to innovation and entrepreneurship creation-discussion for the second time on the spirit of the important speech of general secretary Xi Jinping when he participated in the deliberations of the Fujian delegation, and the Fujian daily on Mar. 12th, 2016. News network of the Communist Party of China: <http://theory.people.com.cn/n1/2019/0312/c40531-30971599.html>.