Analysis of Health Service and Management Professional Perceptions and Influencing Factors Based on Multiple Linear Regression

Xiaowen Wan[1], Cheng Zeng[1], Qiang Ma[2], Yinfeng Huang[1] and Xiaoqin Zhang[1]
[1]*School of Economics and Management, Jiangxi University of Chinese Medicine, Nanchang, Jiangxi, China*
[2]*The Third Affiliated Hospital of Guangzhou Medical University, Guangzhou, Guangdong, China*

Keywords: Health Service And Management, Professional Cognitive, Influencing Factors, Multiple Linear Regression.

Abstract: Objective: To understand the professional recognition of health service and management students, to conduct factor analysis, and to provide rationalized suggestions for improving the recognition of this profession. Methods: Using a self-designed questionnaire, an anonymous questionnaire survey was conducted on 155 students majoring in health services and management at Jiangxi University of Chinese Medicine. The data obtained were analyzed using by Excel software to create a database and SPSS 22.0 software to perform descriptive analysis and multiple linear regression tests. Result: The overall level of professional awareness of the study subjects is moderate to low, and the level of professional awareness of senior students is higher compared to that of junior students. Students are not very willing to change their majors and are not very satisfied with the curriculum of their current majors. Multiple linear regression analysis showed statistically significant differences in grade level perceptions and engagement in the profession ($p < 0.05$). Conclusion: It is recommended to broaden the scope of publicity for the health service and management major, strengthen national policy support, actively guide students to clarify their orientation, optimize the curriculum, enrich the faculty, and provide more opportunities and ways for students to contact scientific research and solve practical problems.

1 INTRODUCTION

In August 2016, Xi Jinping stressed at the National Health Conference that "we should advocate a healthy and civilized lifestyle, build the concept of big health, change the focus on disease treatment to people's health, establish a robust health education system, improve the health literacy of all people, and promote the deep integration of national fitness and national health." (The National Health Conference, 2016) In October 2016, the State Council of the People's Republic of China issued the *'Plan of Health China 2030',* which ushered in a major historical development opportunity for health services. Under the historical opportunity, the Ministry of Education approved the establishment of the health service and management major in 2015. Health service and management is a new comprehensive application profession based on medical science and management science, which meets the needs of society, caters to the development of the health industry and integrates other emerging subjects. (Xie, 2013)

Professional cognition means that students have a clear understanding of the training objectives, learning contents and requirements of their majors, and the job characteristics, contents and development direction of their future careers (Mao, 2012). Professional cognition is the main influencing factor of learning motivation, which directly affects learning efficiency and quality. Literature research shows that the current situation of professional cognition among college students in China is not optimistic in general. Low professional cognition is not conducive to the development of health service and management profession. On the one hand, the health service and management profession was firstly established in five universities for enrollment in 2016, and the social awareness is weaker compared with traditional professions. On the other hand, the curriculum system of health service and management profession covers several first-level disciplines such

* Corresponding author's e-mail address

Wan, X., Zeng, C., Ma, Q., Huang, Y. and Zhang, X.
Analysis of Health Service and Management Professional Perceptions and Influencing Factors Based on Multiple Linear Regression.
DOI: 10.5220/0012040800003620
In *Proceedings of the 4th International Conference on Economic Management and Model Engineering (ICEMME 2022)*, pages 624-630
ISBN: 978-989-758-636-1

as clinical medicine, preventive medicine and management, and the contents of the courses include basic medicine, clinical medicine, preventive medicine, Chinese medicine, psychology and management. The complexity of the academic system seriously affects students' cognition of their majors. Therefore, it is of great practical significance to conduct a study on the cognition of health service and management students.

In this study, health service and management students of Jiangxi University of Chinese Medicine were investigated by means of questionnaires. The purpose is to collect students' cognition of the major and their suggestions on the course system; to provide empirical data for further improvement of the training program and course system, and to provide reference for the development and innovation of the major in other universities.

2 OBJECTS AND METHODS

2.1 Survey Objects

All 155 undergraduate students of Health Services and Management, College of Economics and Management, Jiangxi University of Traditional Chinese Medicine, Classes 2017--2019 were selected as the study objects. This study was conducted with informed consent and anonymity

2.2 Survey Methodology

The questionnaire was self-administered through literature review and consisted of two parts: basic situation and professional identity. The questions were designed according to three dimensions: professional awareness, professional emotion and professional commitment (corresponding to the number of questions:4,3,3. 10 questions in total). The questionnaire includes: ① Cognition of the major: willingness to change the major, professional interest, employment intention, study plan, professional knowledge and skills mastery, etc.; ② Degree of understanding of the courses offered; ③ Degree of attention to professional dynamics and research progress; ④ Subjective questions: suggestions for curriculum development and improving social acceptance of new majors.

2.3 Assignment Principles

The questionnaire was scored on the Likert five point scoring method. There are five levels, with scores ranging from 5 (fully conforming) to 1 (not conforming at all), with higher scores representing higher professional cognition, and each study participant's scores are totaled and converted to a percentage system.

2.4 Statistical Methods

Data entry was performed by using Excel software to create a database. SPSS 22.0 was used for statistical analysis, mainly descriptive analysis and multiple linear regression test analysis (test level α=0.05).

3 CONCLUSIONS

3.1 Basic Information of the Study Subjects

All undergraduate students in Health Services and Management 2017 - 2019 class 155 students, 155 questionnaires were distributed, 155 were returned, The recovery rate, efficiency rate and coverage rate of the questionnaire are 100%. The number of freshmen students is 52 (33.55%), the number of sophomores is 55 (35.48%), the number of juniors is 48 (30.97%); the number of female students is 115 (74.19%), male students is 40 (25.81%); the number of students who transferred in the entrance examination is 65 (41.94%), the number of non-transfer students is 90 (58.06%); the number of urban students is 52 (33.55%), the number of rural students is 103 (66.45%); the number of arts students is 78 (50.32%), science students is 77 (49.68%). In addition, the survey results of these three dimensions are: professional commitment > professional emotion > professional awareness.

3.2 Professional Awareness

The statistics show that the overall average score of professional awareness is low, and the frequency distribution of each question is shown in Table 1. The proportion of people who do not know the curriculum of the major is 1.29%, including 1 freshman and 1 sophomore each; 11.61% of subjects are not willing to work in the field at all. Most of them are in the distribution range of "neutral" and "not too much".

Table 1: Distribution of response status of professional awareness questions (%).

Question	Very much	Much	Neutral	Not too much	Very not
Do you want to change your major?	18 (11.61)	27 (17.42)	54 (34.84)	46 (29.68)	10 (6.45)
Are you interested in your profession?	5 (3.23)	36 (23.23)	62 (40)	47 (30.32)	5 (3.23)
Are you willing to work in this profession?	14 (9.03)	36 (23.23)	29 (18.71)	58 (37.42)	18 (11.61)
Do you understand the curriculum of the program?	2 (1.29)	32 (20.65)	70 (45.16)	47 (30.32)	4 (2.58)

3.3 Professional Emotionality

Statistics show that the overall sentiment of the profession is moderate, and the distribution of the number of subjects is mainly concentrated in the range of "relatively", "neutral" and "not very", and the number of people on both sides of the extremes is relatively small. Among them, the number of people who fully understand the knowledge and skills required to master the profession is 0. It means that the popularity of the profession is not enough and the publicity is not strong enough. The frequency of the distribution of the number of people in the topic of professional emotion is shown in Table 2, and the data in the table below shows that the proportion of the number of people in various distribution degrees is moderate.

Table 2: Distribution of responses to the question of professional affectivity of the study subjects (%).

Question	Very clear	Clear	Neutral	unclear	Very unclear
Do you understand the required knowledge and skills?	0 (0.00)	31 (20.00)	66 (42.58)	56 (36.13)	2 (1.29)
Do you know the employment situation of this profession?	4 (2.58)	32 (20.65)	74 (47.74)	41 (26.45)	4 (2.58)
Do you make long-term study plans?	5 (3.23)	64 (41.29)	46 (29.68)	39 (25.16)	1 (0.65))

3.4 Degree of Professional Input

The statistics show that the overall situation of professional commitment is upper intermediate. The frequency of the distribution of the number of professional commitment is shown in Table 3. The results show that the number of people who will not miss professional courses at all is 113 (72.90%); the number of people who will not miss professional courses too much is 40 (25.81%), and interviews revealed that most of these students were freshmen and sophomores who were absent because they needed to attend some important campus events or because they were unwell. The number of students who will always miss professional courses is 0, and the number of students who will miss professional courses is 1 (0.65%) and 1 (0.65%), which shows that students attach more importance to professional courses and hope to learn useful professional skills.

Table 3: Distribution of responses to the question of professional input of the study subjects (%).

Question	Always will	Will	Neutral	Will not	Never
Do you be absent from professional courses?	0 (0.00)	1 (0.65)	1 (0.65)	40 (25.81)	113 (72.90)
Do you read books or journals related to this profession?	2 (1.29)	47 (30.32)	50 (32.26)	50 (32.26)	6 (3.87)
Do you follow the professional development and research progress?	8 (5.16)	55 (35.48)	48 (30.97)	41 (26.45)	3 (1.94)

3.5 Multiple Linear Regression Analysis

Using SPSS to conduct multiple linear regression analysis on the three dimensions of students' professional cognition, and the results of the analysis are shown in Table 4.

Table 4: Analysis of factors influencing multiple linear regression.

Statistics	Gender			Age			Transfer or not		
	Awareness	Affectivity	Input	Awareness	Affectivity	Input	Awareness	Affectivity	Input
T	0.967	1.071	0.630	-8.693	0.197	9.444	-0.174	-0.338	0.771
P	0.335	0.286	0.529	0.000	0.844	0.000	0.862	0.735	0.442

Table 4(continued). Analysis of factors influencing multiple linear regression.

Statistics	Place of student source			Economic level			Arts & Sciences		
	Awareness	Affectivity	Input	Awareness	Affectivity	Input	Awareness	Affectivity	Input
T	0.484	-0.925	-0.825	-1.599	0.223	0.163	-0.462	-1.041	-0.405
P	0.629	0.356	0.410	0.112	0.824	0.871	0.645	0.300	0.686

Six variables, including gender, grade, transfer or non-transfer, place of origin, economic level, and discipline type, were analyzed to discover the influence of professional cognition, emotion, and commitment. The study data did not have significant outliers and were nearly normally distributed within each group, while the variance was flush. The statistical results showed that the P-value of the influence factor of grade on professional cognition and engagement was less than 0.05, and the higher the grade, the higher the score of perception and engagement, which was positively correlated. The p-values of the remaining five influential factors in professional awareness, affectivity and commitment were all higher than 0.05 and not statistically significant. It means that the main factor affecting students' professional recognition is grade level. As the study of the major deepens and the major is gradually promoted, students' recognition of the profession is getting higher and higher.

3.6 Analysis of Subjective Questions

The questionnaire set two open questions, which also showed differences in the answers. Sophomores and juniors were clearer and more comprehensive in answering the questions compared with freshmen. When answering the question "What are your valuable suggestions and opinions on the curriculum of this major", freshmen students generally answered that college should offer more practical courses, the current curriculum is too complicated, many courses are not related to their major, and some students even asked why they need to study advanced mathematics

in this major. In addition to the above responses, sophomores and juniors also reflected that more courses should be offered to learn the operation of related equipment; clear training directions, set focused courses, and train specialists rather than generalists. In response to the question "How do you think the social recognition of new majors should be improved?", many students said that firstly, they should express their recognition of their chosen majors; secondly, the national policy should increase the support for health service and management majors, increase the publicity of new majors, hold more related lectures, and enhance the publicity of online platforms. From the students' answers, we can also reflect that they are eager for the social recognition of their own profession.

4 DISCUSSION

4.1 Analysis of the Current Situation of Professional Recognition

First of all, more than 72% of the survey respondents are positive about the employment prospect of the profession and are willing to engage in the work related to the profession. Most of the students are interested in the profession to a high degree, the proportion of interested people is 62.32%, and those who are very interested and not interested at all each account for 3.27%; secondly, 74.15% of the students know less about the employment situation of the profession, while 2.54% of students do not know at all; 42.53% of students generally know about the knowledge and skills required for the major, 36.14% do not know much, while only 20% know. Through data analysis, we found that the program obeyed the transfer rate of more than half (58%), the first volunteer rate is not high. The reasons for the above situation are multiple. On the one hand, it is a new major, with a late start, and an uncertain job market and insufficient publicity, so there are not many "Double First-class" and "Project 985" universities offering this major, and it is not the mainstream discipline of universities; on the other hand, the media and parents do not know much about this major, and there are not many graduates of the major and the corresponding employment information is lacking, which leads to the low rate of filling in the first volunteer of the major. Take Jiangxi University of Traditional Chinese Medicine as an example, most of the students are transferred.

4.2 Preferences for Professional Curriculum and Study Planning

Curriculum aspect. As many as 59.62% of the students do not know the setting of their major courses at all, and the number of students who know only accounts for 21%. In the on-site conversation, we understand that it is because students have not studied major courses for a long time, and many students are not very interested in their own major, so they know almost nothing about the setting of major courses. However, 97.10% of the students said they would not be absent from their major courses, which shows that most of the students have a serious and responsible attitude towards their major studies. In the survey of subjective questions, there are also many students who think that the professional curriculum is not reasonable. For example, courses such as advanced mathematics and linear algebra are not necessary, while courses in clinical medicine and anatomy and physiology are less frequently offered. Schools should increase the opening of practical sessions to improve practical hands-on skills. This may be due to the fact that students are still in the lower grades, where the public courses take up a larger proportion and there are fewer opportunities for practice. As the grades increase, these doubts will decrease with the rich diversity of the curriculum.

Study planning. The percentages of students who "neutral" and "not very much" make study plans for themselves are 29.63% and 25.12% respectively. 44.46% of students make long-term study plans for their major studies, which indicates that most of the students do not pay enough attention to their own majors and lack long-term study and career planning. The data on the reading of books and journals related to this major shows, 31.52% of the students said they often read related books, and 40.58% of the students said they often pay attention to the related trends and research progress of this major. This also indicates that the students of this major read less, lack the knowledge expansion of related majors, and have insufficient knowledge of their own majors.

5 RECOMMENDATIONS

Professional cognition largely influences students' professional learning and their future career maturity. By sorting out the relevant problems found in this survey, it is suggested to improve students' professional cognition from the following aspects.

5.1 Strengthen Professional Publicity and Establish Professional Self-Confidence

The survey shows that the main way for students to obtain professional knowledge is through teachers. Nearly half of the students in the open answer hope to increase the publicity of the major. Not only the network platform, many students also suggested that more lectures related to the major should be opened, and even the publicity of the major can be radiated to the township areas, so that the publicity of the major can penetrate the people and play a subtle role. As a new major, many students are informed about this major through online platform, which also reflects that the publicity of the major is inadequate and the popularity is not strong. It is suggested to strengthen the promotion of the major, use the media and network to actively promote the professional profile, employment fields and prospects. Through the introduction of outstanding graduates, schools can help students understand the knowledge and skills required for their majors, correct their learning attitudes, have a clear and realistic plan for their studies and careers when they fill out their volunteer forms, give them a strong sense of belonging and honor for their majors, and establish a sense of professionalism.

5.2 Improve the Training Program and Optimize the Curriculum System Constantly

The survey shows that the training objectives and curriculum system are the most confusing for students. The proportion of those who generally understand the curriculum of the major reaches 43.23%, and those who do not know much and do not know at all also account for 29.82% and 3.87% respectively, both are higher than the number of those who know very much. As a new major only opened for the first time in 2016, there is no national standard for curriculum construction, and the training program and curriculum system of each university are in the exploration stage. In response to the irrelevant curriculum arrangement proposed by students, such as higher mathematics. It is recommended to carefully define the role of each course offered in the teaching program in the curriculum system, delete and merge duplicate course contents, and optimize the class schedule. Determine the reasonable ratio of public theory courses, humanities foundation curses professional and professional foundation courses, ability and method training courses, quality training courses, etc. (Zhang, 2006), pay attention to the curriculum articulation. According to the requirements of professional training, professional mindset should be cultivated as early as possible. Professional foundation courses and professional courses can be appropriately advanced, while adding some lectures to broaden students' professional horizons.

The characteristics of health service and management major determine the importance of practical teaching links, and the ideal practical teaching mode is "multi-dimensional synergy", which is suitable for the cultivation objectives of the majors (Yang, 2008). For freshmen, sophomores and juniors, we can design a hierarchical and stage-specific practical teaching link with different course contents, so that the practical teaching can be integrated into the whole process of professional teaching from shallow to deep, and students can receive practical teaching training from easy to difficult and simple to complicated in a step-by-step manner. (Deng, 2007) We will make full use of the practical teaching time during winter holiday and summer holiday, and establish internship practice bases with clinical skill departments of hospitals and community health service institutions; design the practical teaching syllabus; arrange students to go to these bases for internship. Practical teaching of students' testing skills, assessment skills, and intervention skills in accordance with the subjects designed in the syllabus, and enriching the content and links of practical teaching.

5.3 Raising the Level of Institutions Offering Majors and Improving the Educational Level

Many students also said that the state should encourage "Double First-class" and "Project 985" universities to open health service and management majors, so as to enhance the level of institutions offering the majors and thus improve the reputation of the majors. Due to the short time and late start of the profession, the construction of the profession is still in the exploration stage, and not many "Double First-class" universities offer this profession. The lack of "Double First-class" universities is not conducive to improving the recognition of the profession. It is suggested that the state should increase the policy support in order to encourage "Double First-class" and "Project 985" universities to open this major, set up related scholarship programs, and cultivate higher-level research talents.

Some studies have shown that the professionalism of college teachers has an important impact on teaching (Zhang, 2016). Among the external support factors influencing students' professional attitudes, teachers' professionalism ranked first; it is evident that faculty members are crucial to the cultivation of high quality health services and management personnel. The survey shows that students value their mentor's research areas, and look forward to actually participating in the mentor's research project. It is also very helpful and enlightening for students to go on to higher education. It is suggested that "Double First-class" and "Project 985" universities should give full play to the leading role of their high-quality teachers and encourage the participation of undergraduates in the research projects of their mentor. In addition to the study of professional courses, students should be exposed to high-level scientific research to solidify their professional foundation, familiarize themselves with the future direction of professional development, and improve the level and standard of education.

REFERENCES

Deng Y, Li C. (2007) Rational thinking on the three-dimensional practice teaching mode of law majors. *China University Teaching*, 11:83.

Mao F. (2012) Exploring the ways to enhance the professional cognitive ability of college students. *Higher Education Forum,* 9:82-85.

The National Health Conference,2016. Efforts to all-round, full-cycle protection of people's health-General Secretary Xi Jinping's speech at the National Conference on Health and Health caused strong repercussions. http://www.xinhuanet.com//politics/2016-08/22/c_1119434555.htm.

Xie Y, Lin C, Wan X. (2013) Analysis of the current situation of health care management professional education in China. *Journal of Medical Information,* 24:8-8.

Yang A. (2008) Exploring the multidimensional practice teaching model of public career management in medical schools. *China Higher Medical Education*, 8:60-61.

Zhang X, Chen L. (2006) Exploration of curriculum issues of health career management in higher education institutions. *Chongqing Medicine*, 35(6):564-566.

Zhang H. (2016) Analysis of the impact of college teachers' quality on classroom teaching. *Journal of Higher Education,* 11:210-211.