

Analysis of the Research Capability of Young and Middle - Aged health innovative Talents in Henan provinceWei Nie^{1,2}, Huihui Wang¹, Shanshan Yin¹, Chenmei Li³, Shi Wang¹¹Center of medical evaluation and hospital management, Henan academy of Medical Science, Zhengzhou, Henan 450003, China²Institute of hospital management, Zhengzhou University, Zhengzhou, Henan 450001, China³The First Affiliated Hospital of Zhengzhou University, Zhengzhou, 450052, ChinaEmail: nieshanren@yahoo.com.cn

Abstract: The objective of this study was to know the research status of health innovative talents in Henan province, so as to afford useful references for talent introduction and training work in future. The scientific research project, achievement awards and appraisal, published papers, subject team culture and so on were analyzed in this paper. Scientific research ability of the health innovative talents in Henan mainly embodied in the municipal and provincial level, which still had a gap to gear to national, provincial or ministry team. Therefore, it's required to offer more cultivation and support on the scientific innovation in future. It's very necessary to strengthen high-level personnel training and introduction work. Meanwhile various measures should be taken to promote the cultivation of high-level talents.

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Key words: Scientific innovative talents; research ability; analysis

1. Introduction

In order to introduce and train high-level talents of health science and technology, to reverse to put an end to the high-level talents shortage and to improve the development of medical science and technology in Henan province, the 'project of Henan health innovative talents of science and technology' was launched in 2009 ('innovative talents project' for short) ^[1]. In July 2012, the assessing standard system of innovative talents was formulated and the selected innovative talents were examined in mid-term evaluation ^[2]. This paper is aimed to know status of health talents by analyzing the data of medium-term evaluation for health innovative talents in 2012, so as to afford useful references for talents introduction and training work in the future.

2. Material and methods

2.1 Data Sources

This data is from mid-term examination on health innovative talents of science and technology project in Henan province in 2012 ^[3]. There are were about 264 middle-aged and young scientific and technological innovative talents were analyzed from Provincial Medical Institution, research institutes, medical college and health bureaus of provincially administered municipalities.

2.2 Analysis methods

The status of scientific research projects, achievements awards and appraisal, published papers, works and scientific team training from May 1, 2009 to June 30, 2012 was analyzed by contrast. Excel 2003 was used to input data.

3. The results

3.1 Basic status

264 middle-aged and young scientific and technological talents in Henan province were analyzed, of which 205 talents were from principal institutions (77.70%), 59 were from municipal institutions (22.30%).

3.2 Status of research projects

During the period of the 'innovative talents project' from May 1, 2009 to June 30, 2012, there were 235 scientific research projects applied successfully by the young talents in Henan province, including 26 national projects, 4 projects of national natural science fund, 74 principal projects and 131 municipal projects, which respectively accounted for 8.55%, 1.32%, 24.34%, 1.32% of total projects. Overall, the projects which have not been approved are more than those of approved, the lowest proportion was 50.38%, and the highest was 98.48%

Table 1 Status of approved scientific research projects for young and middle-aged innovative talents in henan province

Item number	National project	National natural science foundation of China	Provincial project	Municipal project	Units within the project
0	238(90.15%)	260(98.48%)	190(71.97%)	133(50.38%)	195(73.86%)
1	21(7.95%)	4(1.52%)	45(17.05%)	88(33.33%)	53(20.08%)
2	2(0.76%)	0	21(7.95%)	27(10.23%)	14(5.30%)
3	3(1.14%)	0	7(2.65%)	15(5.68%)	2(0.76%)
4	0	0	1.00(0.38%)	1.00(0.38%)	0

3.3 Achievements rewards

Chinese medical science and technology innovation awards, provincial awards, scientific progressing rewards awarded by provincial health department (department of education) to the young innovative talents were 2, 38 and 91, which accounted

for the total projects 1.53%, 29.01% and 69.47% respectively. The lowest proportion was 65.53% which have had not been approved and the highest is was 99.24%. The highest proportion of one project approved was 27.27%.

Table 2 Status of achievement awards young innovative talents of science and technology in henan province

Item number	Chinese medical science	Provincial science and technology progress prize	Health department (department of education) science and technology progress prize
0	262(99.24%)	226(85.61%)	173(65.53%)
1	2(0.76%)	36(13.64%)	72(27.27%)
2	0	2(0.76%)	14(5.30%)
3	0	0	5(1.89%)

3.4 Achievements appraisal

The accomplishments appraisal obtained by young innovative talents were as follows: 1 national approved result, 31 provincial and ministerial appraisal

and 25 municipal approved results, which respectively accounted for 1.75%, 54.39% and 43.86% of total achievements appraisal.

Table 3 Status of achievements appraisal for young innovative talents in Henan Province

Item number	National identification	The provincial or ministerial appraisal	Municipals identification
0	263(99.62%)	235(89.02%)	239(90.53%)
1	1(0.38%)	20(7.58%)	16(6.06%)
2	0.00	9(3.41%)	7(2.65%)
3	0.00	2(0.76%)	2(0.76%)

3.5 Status of published papers

During the examination period, the published papers achieved by Henan young innovative talents were as follows: 84 SCI papers, 16 SCIE /ISTP papers and 184 papers published on domestic core journals

respectively accounted for the total pieces of published papers are 29.58%, 5.63% and 29.58%, the average per capita articles published on SCI, SCIE/ISTP, and core journals were 0.32, 0.06 and 0.07 respectively, not up to 1.

Table 4 Status of published papers of young innovative talents in Henan province

Item number	SCI	SCIE/ISTP	Core journal
0	180(68.18%)	248(93.94%)	80(30.30%)
1	43(16.29%)	10(3.79%)	58(21.97%)
2	23(8.71%)	3(1.14%)	31(11.74%)
3	5(1.89%)	2(0.76%)	40(15.15%)
4	8(3.03%)	0.00	18(6.82%)
≥5	5(1.89%)	1(0.38%)	37(14.02%)

3.6 Status of published works

The works finished by young innovative talents in Henan includes 1 treatise written alone, 54 treatises

finished by coauthor, chief-editor, authoring and 31 works written by partaking authors. The average per capita treatise is 0.33.

Table 5 Status of published works by young and middle-aged talents in Henan province

	alone author	Co-author, editor, and compiled	The partaking author
0	263(99.62%)	210(79.55%)	233(88.26%)
1	1(0.38%)	41(15.53%)	20(7.58%)
2	0	11(4.17%)	7(2.65%)
3	0	1(0.38%)	4(1.52%)
4	0	1(0.38%)	0

3.7 Scientific research team training

During the evaluation period, the achievements obtained by young innovative talents in Henan on project team training were as follows: 10 key subjects

were approved by the Health Ministry, 32 approved key subjects at principal level, 9 key subjects at municipal level, 3 key labs at principal level and 11 key labs at municipal level.

Table 6 Status of scientific research team training of young talents in Henan province

The ministry of health of key specialty	Henan province key disciplines/henan medical disciplines	key key	The municipal key subject	The innovation team of science and technology of Henan province	Provincial key laboratory	municipal key laboratory
0	256(96.97%)	232(87.88%)	255(96.59%)	255(96.59%)	261(98.86%)	256(96.97%)
1	7(2.65%)	32(12.12%)	9(3.41%)	9(3.41%)	3(1.14%)	6(2.27%)
2	0	0	0	0	0	1(0.38%)
3	1(0.38%)	0	0	0	0	1(0.38%)

4 Discussion and Suggestions

4.1 To improve scientific research ability of middle-aged and young innovative talents of science and technology.

According to the result, the young and middle-aged innovative talents had achieved better results in approved projects, awards, and achievements appraisal, published papers, works, team training and so on. They are mainly included: 26 national projects, 4 national natural science foundation projects, 84 papers selected by SCI and 10 key projects of ministry of health. Of those showed that the investment and profit of project policies, funds, management were well, which are beneficial from the implementation of innovative talents project in Henan. However, the proportions of projects at national level is relatively low, which covered approved projects, achievements awards and appraisal, published works and team training. On the other hand, the proportions of those at principal and municipal level are high. To sum up, the results showed that the young and middle-aged innovative talents in Henan had a good base and enormous potential on scientific research innovation. The measures such as further investigation and strengthening the scientific research investment should be taken to improve the scientific research ability of the innovative talents.

4.2 To find effective channels and methods for training the young and middle-aged scientific research innovative talents.

Accordance to the with the requirements of the implementation plan for project of Henan health innovative talents of science and technology, the project focused on creating innovative platform, integrating resources, and capital investment, with an emphasis on academicians and reserve talents. At the same time, it

hoped that the young and middle-aged talents would be taught by academicians and reserve talents, also funds were supplied by their organizations, which in partly contributed to the relatively disabled projects at national and principal level on Henan young and middle-aged scientific innovative talents cultivation. As a matter of fact, it should be differentiated to support the innovative talents according to their work, major and study field. For example, the government should organize and coordinate in time when the public health talents make social investigation. In the meantime, colleges and principal medical units should play the main role to teach different talents from various jobs to enhance academic communication and cooperation according to their characteristics, so as to improve their scientific and innovative ability as a whole^[4]. In one word, the principal do not pursue the talents' fame, just only for their contribution should be insisted to encourage the medical organizations to take various measures such as short-term job, project cooperation, co-construction of subjects and labs and so on for attracting high - level talents domestic and overseas.^[5]

4.3 To develop training plans for talents, to supervise the assessing mechanism, to carry out the dynamic management and to form long-term effective mechanism for talents training.

Talents are the key resource and the core of development. Improving development of the talents is impossible without government and units' cultivation. Therefore, it suggested that measures be taken according to the twelfth five - year -plan for Health Development in Henan Province, such as formulating and developing the talents' training plan, making out the training target scientifically, establishing yearly developing goals of academic subjects and signing

agreements with talents and so on. To carry out supervisory duties at the same time, the organizations should charge the daily monitoring work on the talents, and report work status and results to the superior in time. Especially, anyone who failed evaluation must firmly be refused. As for the government and organizations who insure funds investment and the policies for projects to improve to form a long-term mechanism of talent training^[6].

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