Analysis of major programs in the field of health science funded by the National Natural Science Foundation of China between the years 2010 and 2018

Rong Lei¹, Quan Liu¹, Yan Wang¹, Hao Wang², Yaxing Shen²

¹The National Natural Science Foundation of China, Beijing 100085, China; ²Department of Thoracic Surgery, Zhongshan Hospital, Fudan University, Shanghai 200032, China

Contributions: (I) Conception and design: R Lei, H Wang; (II) Administrative support: Q Liu, Y Wang; (III) Provision of study materials or patients: R Lei, H Wang; (IV) Collection and assembly of data: Q Liu, Y Wang; (V) Data analysis and interpretation: R Lei, H Wang, Y Shen; (VI) Manuscript writing: All authors; (VII) Final approval of manuscript: All authors.

Correspondence to: Hao Wang, MD; Yaxing Shen, MD. Department of Thoracic Surgery, Zhongshan Hospital, Fudan University, 180 Fenglin Road, Shanghai 200032, China. Email: wang.hao@zs-hospital.sh.cn; yaxing.shen@zs-hospital.sh.cn.

Background: The National Natural Science Foundation of China (NSFC) plays an important role in supporting scientific research. The Major Program is one of the most important types as it improves the capability of indigenous innovation in China's basic research efforts. Thus, numerous scientists and researchers are concerned about its application and funding aspects.

Methods: The information and data of the Major Program were collected from guide books and annual reports released between the years 2010 to 2018 via the NSFC official website. We conducted further analysis to discover any regularities and tendencies.

Results: From 2010 to 2018, a total of 21 areas in the field of health science were funded by the NSFC and eventually 87 projects were approved, totaling 32.8 million CNY. The applicants funded were from 43 host institutions, 70 were males and 17 were females, and the applicants were aged between of 35 and 77 years. Of all the applicants funded, 86 had senior title while only 1 had deputy senior title. The collaboration of institutions was common in the applications.

Conclusions: Several characteristics of the Major Program could be found based on the analysis, which may be beneficial for the applicants in the future.

Keywords: Major program; health science; funded; National Natural Science Foundation of China (NSFC)

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Introduction

The National Natural Science Foundation of China (NSFC) is an institution tasked with the administration of the National Natural Science Fund from the Central Government. Since its establishment in 1986, the NSFC has comprehensively implemented a rigorous and objective merit-review system to fulfill its mission of supporting basic research and promoting socioeconomic development (1).

Among the diverse project types maintained by the NSFC, the Major Program serves the primary needs of the scientific frontier, national economy, and social development initiatives. By conducting multidisciplinary research, it plays both a supporting and guiding role in improving the capability of domestic innovation in China's core research efforts.

Due to the importance of the Major Program, it has drawn broad concern and focus from many researchers in the field of health science. Therefore, we conducted this study to analyze the Major Program in the field of health...
science funded by NSFC between the years 2010 and 2018.

Methods

The information and data of the Major Program were collected from editions of guide books (2) and annual reports (3) released between the years 2010 and 2018 via the NSFC official website. Further analysis was made to discover any regularities and tendencies.

Results

Overall condition

From 2010 to 2018, a total of 21 programs in the field of health science were funded by the NSFC Major Program, and eventually 87 projects were approved, with the amount totaling 32.8 million CNY. The detailed information is shown in Table 1 and Figure 1.

Applicants’ host institutions

The applicants funded were from 43 host institutions. The top ten institutions ranked are shown in Figure 2.

Regional distribution of applicants funded

The applicants funded were from 12 provinces and municipalities which are shown in Figure 3.

Gender of applicants funded

Of the applicants funded, 70 were males and 17 were females (Figure 4).
Age of applicants funded

The ages of applicants funded were between 35 and 77 years, with the age group between 46 and 60 being the most common (Figure 4).

Professional qualifications of applicants

Of all the applicants funded, 86 had senior title (including professor, researcher, and chief physician) while only 1 had deputy senior title (associate chief physician).

Collaboration of institutions

Collaboration was commonly found in the applications. Of all the applicants funded, 64 cases had cooperation between 2 institutions, and 6 cases had cooperation between
Discussion

Several prominent characteristics of the Major Programs could be gleaned based on our above analysis which may be beneficial for the applicants in the future.

Major Programs cover nearly all health research areas. Among them, blood system, oncology, medical imaging, biomedical engineering, medical pathogenic micro-organisms and infection account for the majority part of the funding.

Universities and institutes of Chinese academy of sciences show great strength on the ability of medical scientific research. And they successfully dominate the number of the NSFC Major Program projects funded. Geographically, the host institutions funded appear to be concentrated in Beijing and Shanghai. At the same time, collaboration of institutions seems to be advantageous.

The principle investigators of Major Programs are mostly with the age of 50, although the number of PIs in their 40s are growing.

Generally, the eligible applicants should have excellent academic accomplishments, with considerable influence and team ability. Meanwhile, applicants should follow the guidelines when writing proposals, focus on key scientific issues with strategic and fundamental significance, concentrate on interdisciplinary scientific targets, and pay attention to coordination and links with other national scientific programs. The research team should have an adequately prepared pilot study, sufficient supporting conditions, innovative ability, and a number of high-level academic leaders.
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Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

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