

Cooperation between China and Iran in addiction medicine: opportunities, challenges and strategies

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INTRODUCTION

Addiction is a major global risk factor for disability and premature death¹ and has become a public health and social problem worldwide. Despite substantial investments from governments and research institutions globally, current addiction medicine research remains centred in Western countries. However, theories, models and results from western-centric research may not be applicable to different cultures. Non-Western countries such as China and Iran, and Western countries are committed to establishing addiction prevention and treatment tailored to their unique histories and cultures. To foster a global addiction science, it is important to increase the diversity of evidence without preconceived biases. Studying addiction problems across different regions and cultural backgrounds and sharing successful prevention and treatment models can provide a more comprehensive perspective for global addiction science, potentially yielding innovative solutions that benefit all countries.

China and Iran have their own unique addiction challenges and treatment experiences and have become important representatives of addiction research progress in countries outside the Western axis. Both China and Iran have rich traditional medicine experiences in addiction medicine, which have been developed over thousands of years of trial and error. These offer valuable insights for refining addiction treatment and preventing relapse. Traditional Chinese medicine has a history of over 2000 years in China and has been used to treat addiction, including substance and non-substance addiction, for the past two centuries. Traditional herbal therapy, which targets multiple systems and mechanisms, is considered

effective in relieving withdrawal symptoms and preventing addiction relapse with minimal side effects.^{2,3} It also has a rehabilitative effect on physical issues caused by long-term drug use, including improvements in immune function and working memory and the prevention of neurological diseases.⁴ The continuous application of traditional medical therapies in China and Iran has preliminarily proven effective in addiction treatment in Western countries, demonstrating the potential benefits of integrating traditional practices into modern medicine.

The collaboration of addiction disciplines in China and Iran can provide new impetus and opportunities for the development of global addiction science. With the launch of China's 'Belt and Road' Initiative, high-level meetings have paved the way for rapid collaboration channels in medical care and healthcare between China, Iran and other countries. The 'China-Iran' Belt and Road International Addiction Medicine Symposium in Shanghai invited leading scholars in the field to explore the latest developments in addiction medicine and promote the international development of addiction medicine and drug rehabilitation interventions. Based on this conference, we explored the collaboration opportunities, challenges and strategies in addiction medicine between China and Iran ([figure 1](#)). By promoting international cooperation in addiction disciplines, we hope to provide more effective solutions, reveal a more comprehensive perspective for the advancement of global addiction science and facilitate innovation and development in addiction medicine research to better address global addiction challenges.



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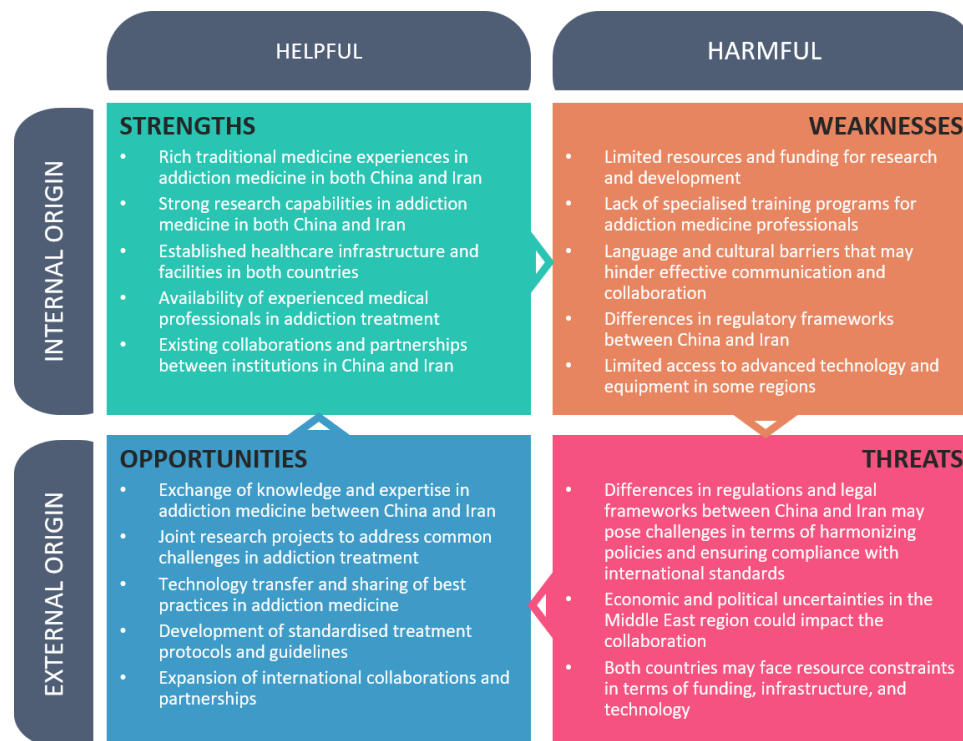


Figure 1 SWOT analysis for the cooperation between China and Iran in addiction medicine.

CHINA'S 'BELT AND ROAD' INITIATIVE PROVIDES OPPORTUNITIES FOR COLLABORATION IN THE FIELD OF ADDICTION MEDICINE BETWEEN CHINA AND IRAN

Launched in 2013, the Belt and Road Initiative has significantly enhanced collaboration between China and countries along the route in various areas, including healthcare, and has had a significant impact on the global health landscape.⁵ Subsequent high-level meetings have outlined the scope for the collaboration between China, participating countries and international organisations in this initiative.⁶ The initiative aims to establish four networks, including public health, policy research, hospital alliances and the health industry, covering areas such as health security, maternal and child health, health policy, health systems, hospital management, human resources, medical research and traditional medicine. Drawing from its experience in improving population health and addressing important health challenges, China is set to shape bilateral or multilateral health assistance policies, especially in collaborations with countries such as Iran.

Leveraging the 'Health Silk Road', China extends medical and healthcare aid to partner countries and strengthens its leadership in global health.⁶ In the context of the coronavirus disease 2019 (COVID-19) pandemic, China actively collaborated with participating countries in the Belt and Road Initiative and international organisations, as exemplified by multiple batches of medical supply donations to Iran.⁷ In March 2021, China and Iran signed a 25-year Comprehensive Cooperation Plan,⁸ including expanding all-round cooperation in health, technology and science. These plans are implemented under the

Belt and Road Initiative and are strategic choices made by China and Iran from a global perspective. Therefore, the cooperation between China and Iran in the field of addiction medicine is expected to be strengthened and expanded, providing new impetus and opportunities for the development of global addiction science.

Under the Belt and Road Initiative, China is forming a unique global partnership that has a significant impact on the profile of global health.⁹ The cooperation between China and Iran in the field of addiction medicine is constantly strengthening, providing important support and help for the development of addiction medicine in both countries. For example, in June 2019, the Iranian Society of Neuroscience organised an addiction science joint seminar in Tehran,¹⁰ aiming to strengthen cooperation between Iranian and Chinese scientific organisations so that both sides can conduct joint research on addiction issues. Addiction experts from China and Iran have shared their research results and treatment experience on addiction, including basic research and clinical translation, at international academic conferences. In addition, China has conducted extensive scientific research cooperation with Iran and international addiction experts and formed expert consensus, clinical services and research guidelines.^{11 12}

The cooperation between China and Iran in the field of addiction medicine can promote the development of addiction disciplines and treatment methods in both countries and provide reference and guidance for other countries. China and Iran are expected to continue to strengthen cooperation in the future, explore more innovative cooperation models and make greater

contributions to the treatment and prevention of global addiction challenges.

CHALLENGES IN CHINA–IRAN COOPERATION IN ADDICTION MEDICINE

China and Iran have made progress in their cooperation on addiction medicine. However, they also face challenges that limit the depth and breadth of their cooperation, including differences in resources, talent limitations and cultural and legal environments.

First, there are significant differences in data, technology and industrial chain resources between the two countries. For instance, China has a well-established medicine research database with extensive research cohorts on psychosis¹³ and advanced addiction detection technology,¹⁴ which is critical for addiction medicine research and treatment. Also, professional addiction detection, treatment technologies and equipment are required for addiction medicine research. However, these resources differ significantly between the two countries, which may limit the development of addiction medicine cooperation. To address this, China–Iran cooperation should focus on strengthening industrial chain resources; exploring cooperation in sharing data resources; jointly building technology and equipment platforms; and integrating data resources, technology resources and industrial chain resources platforms.

Second, the lack of addiction medicine professionals familiar with the bilateral cultural and legal environments is a major bottleneck for China–Iran cooperation. Addiction-related issues involve considerations of personal privacy, ethical norms and the complexity of intertwined social environments and family backgrounds. These differences may lead to differences in treatment and prevention strategies between the two countries, affecting the progress of China–Iran cooperation. To address this, China–Iran cooperation needs to deepen mutual understanding of cultural backgrounds, perspectives and legal policies, jointly explore solutions to addiction problems and formulate cooperation plans that comply with the legal regulations of both countries.

Last but not least, a major challenge is reducing the relapse rate of addiction and developing an effective rehabilitation model. Addiction is characterised by a high relapse rate and a tendency towards long-term addictive substance use. Environmental cues and stress, as well as exposure to addictive substances themselves, can trigger a relapse. Public rejection of certain addiction treatment methods makes it challenging to implement comprehensive treatment and presents a significant barrier to successful rehabilitation. Traditional Chinese and Iranian medicines have been used to treat addiction for centuries, hence their broad public acceptance. However, for individuals with long-term addiction histories or high doses, treatment with traditional medicine alone may be insufficient. In the future, it will be necessary to fully incorporate traditional medicine interventions into existing

treatment plans, as well as modernise and scientifically validate the experiences of traditional medicine.

THE STRATEGY OF CHINA–IRAN COOPERATION IN THE FIELD OF ADDICTION MEDICINE

Despite challenges, the cooperation between China and Iran is crucial to addressing global addiction issues. To promote the advancement of addiction medicine, both countries should work together to embrace open, cooperative and innovative concepts. They should explore cooperation models and strengthen cooperation in information sharing, talent cultivation and innovative thinking. First, China and Iran should prioritise scientific and technological innovation to establish an effective addiction rehabilitation model. They can modernise and scientifically validate their rich traditional medical knowledge through collaborative efforts to uncover the molecular mechanisms of different addiction disorders in different brain areas. Joint research projects on herbal and natural substances for the treatment of addiction and relapse should be conducted. Collaborating on research and proposals for new potential treatments and methods for various artificial and new substances for the treatment of addiction is also crucial. Additionally, collaboration on the development of digital health strategies and the ‘Internet+Big Health’ industry model can promote the technological revolution in the global health industry.¹⁵ Second, China and Iran should strengthen talent cultivation by training more joint Chinese–Iranian addiction medicine professionals. This can be achieved by establishing joint research institutions, conducting joint training and academic exchanges and promoting exchange student schemes to improve the level and quality of talent. An exchange platform and regular high-level personnel visits can enhance bilateral exchanges between the two countries. They should also cultivate professionals familiar with Iran’s situation; foster interaction with addiction-related industries, research institutions and treatment institutions; and strengthen communication between China–Iran industry–university–research platforms. Interdisciplinary cooperation is also essential, and experts from different disciplines can be invited to participate in research or form interdisciplinary research groups to explore the mechanisms and treatment methods for addiction. Third, a steering committee comprising scientists from both countries should be established. This committee will design a roadmap for staged collaborations and develop a 3-year or 5-year cooperation timetable, with internal and external monitoring at each period’s end to evaluate outcomes. Finally, regular collaborations should be presented at 2–3 days of symposia in partner countries to showcase research results and attract more scientists and institutions to participate. An annual statement or ‘White Paper’ summarising cooperation results should also be prepared for dissemination to international scientific resources and activities.

SUMMARY

During our conversation, we explored the opportunities and challenges for China and Iran to collaborate in the field of addiction medicine and identified resource disparities, talent bottlenecks and cultural and legal differences as some of the key challenges. To enhance cooperation, we proposed initiatives like establishing industry chain resources, promoting talent exchange and training, facilitating data resource sharing and jointly developing technology and equipment platforms. We also emphasised the importance of understanding each other's cultural backgrounds and legal policies and working together to address addiction challenges. The development and implementation of comprehensive cooperation strategies are key to addressing the challenges and fostering successful collaboration.

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