

PERSPECTIVE AND INSIGHT

Trends for the development of traditional Chinese medicine in the digital & artificial intelligence era: Integration into daily wellness practices, smart digitalization, and globalization

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INTEGRATION INTO DAILY WELLNESS PRACTICES: THE INEVITABLE TREND OF INCORPORATING TCM INTO DAILY LIFE

The integration of Traditional Chinese Medicine (TCM) into daily life or wellness practices means incorporating TCM concepts, methods, and technologies into daily life, enabling people to benefit from the health effects of TCM at any time. TCM originates from life practice, and its theories and technologies have been tested and proved through practice.

The theoretical system of TCM is derived from people's long-term observation and summary of daily life and natural phenomena. For example, through the discovery that stone acupuncture, massage of acupoints, and taking Chinese herbal medicines can relieve physical discomfort, relevant medical experiences and concepts gradually formed and were sublimated into basic theories such as the theory of qi monism, the theory of yin and yang and the five elements, and the theory of essence, qi, and spirit. Its diagnosis and treatment methods are also rooted in life. TCM adheres to the concepts of the unity of man and nature and following the laws of nature, emphasizing the holistic concept and syndrome differentiation and treatment. When making a diagnosis, it comprehensively considers the patient's constitution, age, gender, the time of illness,

geographical location, and other life factors. Through the combination of the four diagnostic methods of inspection, auscultation and olfaction, inquiry, and palpation, this diagnostic method is convenient for application in daily life.

In the digital & artificial intelligence (AI) era, the trend of integrating TCM into daily life has become more prominent. On the one hand, with the improvement of people's living standards and the enhancement of their health awareness, the attention paid to TCM has increased. Digital intelligence technologies make the dissemination of TCM knowledge more convenient, and people can obtain relevant information at any time through terminals such as mobile phones and computers. On the other hand, digital intelligence technologies have expanded more possibilities for the integration of TCM into daily life. For example, smart wearable devices can monitor health conditions in real time, and people can conduct personalized health management according to TCM concepts (Wang *et al.*, 2025). In addition, the concepts of TCM dietary therapy and health preservation have been combined with modern technologies to develop products such as medicinal teas and medicated diets that are in line with modern people's tastes and lifestyles.

The integration of TCM into daily life has broad prospects. With the intensification of the aging of the

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global population and the increase in chronic diseases, people's demand for health is rising. As a natural and green health concept and method, TCM will play an increasingly important role in the future health industry.

SMART DIGITALIZATION: THE INEVITABLE PATH TO THE MODERNIZATION OF TCM

The smart digitalization of TCM refers to using modern information technologies such as big data and artificial intelligence to digitally and intelligently transform TCM theories, diagnosis and treatment methods, drug research and development, and even the cultivation of Chinese herbal medicines and the production and processing of TCMs. This not only helps to improve the efficiency and quality of TCM services but also promotes its modernization and global reach.

TCM has a long history and rich clinical experience, but the traditional inheritance and development methods have limitations, such as low efficiency of knowledge inheritance and difficulty in large-scale replication and promotion of diagnostic and treatment experiences. Smart digitalization can provide new solutions to these problems. By mining and analyzing a large amount of data such as ancient TCM books, clinical medical records, and the experiences of famous veteran TCM doctors, valuable information and knowledge can be extracted, accelerating the inheritance and innovation of TCM knowledge, promoting the development of theories and practices (Zeng *et al.*, 2022; Zhao *et al.*, 2020), and realizing the leap from "experience inheritance" to "scientific intelligent manufacturing."

The maturity of emerging digital intelligence technologies such as big data, artificial intelligence, and the Internet of Things provides technical support for the smart digitalization of TCM. For example, infrared thermography technology can visualize the cold and heat states of the human body, and digital auxiliary diagnostic devices such as tongue diagnosis instruments and pulse diagnosis instruments can objectively and quantitatively collect information such as tongue images and pulse conditions, digitalizing the information that is difficult to quantify in traditional TCM, making TCM diagnostic and treatment data more objective and analyzable (Cui & Xu, 2025; Jiao, 2014; Kang *et al.*, 2025) and promoting the deep integration of TCM and modern technologies.

Digital intelligence technologies provide multiple approaches for the modernization of TCM: First, using big data technology to mine and analyze a large amount of TCM data to discover laws and values; Second, using artificial intelligence technology to intelligently assist in the diagnosis and treatment process of TCM to improve

the accuracy of diagnosis and treatment efficiency (Cui & Xu, 2018; Huang *et al.*, 2017; Zhao *et al.*, 2020); Third, realizing the sharing and collaboration of TCM resources through technologies such as cloud computing to promote the collaborative development of the industry.

The smart digitalization of TCM has a bright future. With the progress of technology and the expansion of application scenarios, its role in the future medical and health field will become increasingly crucial. For example, intelligent auxiliary diagnosis and treatment systems can help doctors accurately diagnose diseases and develop personalized treatment plans; TCM big data platforms can assist researchers in having a deeper understanding of the action mechanisms and curative effects of TCM, providing support for new drug research and development.

TO GO GLOBAL: THE STRATEGIC CHOICE FOR TCM GLOBALIZATION

The globalization of TCM means promoting TCM concepts, methods, and technologies to the world, enabling more people around the world to understand and use them. TCM originates in China and has always served the Chinese people. In the future, it will go global and serve all mankind.

In the digital & AI era, this trend has become more obvious. In modern society, there are more chronic diseases and difficult and complicated diseases, and Western medicine has limitations in the treatment of certain diseases. TCM has unique curative effects in treating chronic diseases, functional diseases, and relieving the side effects of radiotherapy and chemotherapy, and can provide new solutions to global health problems.

During the process of globalization, there is frequent cultural exchange among different countries and regions. As an important part of Chinese traditional culture, the dissemination of TCM is an important content of cultural exchange and has high international communication value. Digital intelligence technologies make it more convenient to spread TCM concepts and methods to all parts of the world. In addition, digital intelligence technologies also create more opportunities for the globalization of TCM. For example, establishing international exchange platforms for TCM to promote exchanges and cooperation in TCM among different countries and regions; creating international standards for TCM to promote its standardization and regularization in the international arena.

To go global for TCM has great significance. With the

transformation of the global health concept and the enhancement of the international influence of TCM, it will play a greater role in the future global health cause. Driven by the digital & AI technologies, TCM will surely go global and make greater contributions to the health and well-being of all mankind.

CONCLUSION

In conclusion, the integration of TCM into daily wellness practices, its smart digitalization, and its efforts to go global in the digital & AI era are interrelated and mutually reinforcing. More efforts need to be made to seize this historical opportunity to promote the inheritance, innovation, and development of TCM and TCM joined with other traditional medicines in the world shall contribute more wisdom and strength to the human health cause.

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REFERENCES

- Cui, J., & Xu, J. T. (2018). [Application and Prospects of Traditional Chinese Medicine Diagnostic Techniques in the Context of Artificial Intelligence]. *Academic Journal of Naval Medical University*, 39(8), 846-851.
- Cui, J., & Xu, J. T. (2025). [Current Status and Future Directions of Artificial Intelligence in Traditional Chinese Medicine Four Diagnostic Methods]. *Shanghai Journal of Traditional Chinese Medicine*, 59(1), 7-12.
- Huang, X. R., Zhong, P. Y., & Ma, G. (2017). [Artificial Intelligence and the Intellectualization of Traditional Chinese Medicine]. *Journal of Traditional Chinese Medicine*, 58(24), 2076-2079.
- Jiao, Q. Y. [Feature Extraction and Classification Recognition of Pulse Signals]. Changchun University of Science and Technology (Dissertation). 2014.
- Kang, Z. Z., Zhao, L. H., Xue, C. X., Dong, L. S., Sun, A. R., Wu, L., Jin, Z. S., Lin, J. R., Li, Q. W., & Tong, X. L. (2025). [Research Progress on Modernization of Traditional Chinese Medicine Four Diagnostic Methods]. *World Chinese Medicine*, 20(2), 354-359.
- Wang, C. C., Wu, S., Chen, S., Chen, N. J., Li, H. C., Hu, J. Q., & Zhang, B. L. (2025). [Exploration of the '4S-PAMA' Perception-Based Health Service Model in the Era of Intelligent Healthcare]. *Modernization of Traditional Chinese Medicine and Materia Medica-World Science and Technology*, 27(4), 901-908.
- Zeng, Z. L., Zhang, H. M., Yu, T., Liu, S. H., Zhang, L., Gao, H. J., Chen, G. K., & Tong, L. (2022). [Knowledge Graphs and Their Key Technologies in Traditional Chinese Medicine: A Review]. *Modernization of Traditional Chinese Medicine and Materia Medica-World Science and Technology*, 24(2), 780-788.
- Zhao, Y. P., Li, N., Yan, P. X., Mao, X. B., Gao, J. F., Shang, Z. G., & Huang, L. Q. (2020). [Current Research and Development Perspectives on Artificial Intelligence in Traditional Chinese Medicine]. *Chinese Journal of Integrated Traditional and Western Medicine*, 40(6), 746-749.