# Application of the "Unity of Human and Nature" Philosophy in Modern Transcultural Nursing: A Scoping Review and Digital Health Perspective

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**Abstract:** This scoping review explores the theoretical value, intervention mechanisms, and management pathways of the Traditional Chinese Medicine (TCM) philosophy of the "Unity of Human and Nature" in transcultural nursing and digital health, providing evidence-based support for a holistic nursing paradigm. Following PRISMA-ScR guidelines, English-language empirical literature indexed in PubMed from 2020 to 2026 was systematically screened. Data regarding TCM holistic interventions, digital health technologies, and transcultural nursing were extracted and synthesized. Thirteen core empirical studies were included. In transcultural and digital ecosystems, nurse-led electronic health (eHealth) and artificial intelligence (AI-HEALS) interventions have demonstrated significant psychosomatic improvements in depression (SMD = -2.05), chronic disease management, and cross-cultural communication (e.g., multilingual Question Prompt Lists). However, transcultural competence among nurses remains moderate, significantly constrained by demographic factors and working environments, necessitating cognitive-level educational reconstruction. Digital technologies provide a transformative vehicle to overcome spatio-temporal barriers, actualizing the TCM principle of "tailoring interventions to individuals." Future management should embed transcultural metrics into nursing evaluations and utilize validated tools like the Metacognitive Awareness Scale (C-MAS) to reconstruct multicultural training models, thereby enhancing the global transcultural competence of the nursing workforce.

***Keywords*:** unity of human and nature, transcultural nursing, scoping review, digital health, transcultural self-efficacy, nursing education

## 1. Introduction

In contemporary highly specialized medicine, constructing a holistic nursing system that embodies both humanistic care and transcultural adaptability is a core issue in global health governance. With increasing global population mobility, the underutilization of health services caused by cultural barriers has become prominent. Epidemiological surveys indicate that Chinese immigrants living in Spain exhibit low utilization of local medical care due to language and time barriers, and the majority prefer to use TCM as their first choice for addressing health problems [1]. This reveals the blind spots of conventional medical systems in cultural adaptation and proves TCM's profound social foundation among transcultural groups. TCM's "Unity of Human and Nature" philosophy emphasizes dynamic balance among humans, the natural environment, and inner psychology, possessing natural transcultural inclusiveness. Recently, digital health has provided unprecedented technological carriers for this traditional holistic view to integrate into patients' daily ecology. This study utilizes a scoping review to systematically synthesize empirical research, exploring the intervention details and talent training pathways of this philosophy in the digital health era.

## 2. Methodology

This study followed the PRISMA-ScR reporting guidelines for scoping reviews. The retrieval databases included PubMed, Embase, Web of Science, Cochrane Library, and CINAHL. English search terms included ("Transcultural Nursing" OR "Multicultural") AND ("Traditional Chinese Medicine" OR "Holistic Nursing") AND ("Digital Health" OR "mHealth" OR "Telemedicine"). Inclusion criteria were: (1) published from January 2020 to June 2026; (2) randomized controlled trials (RCTs), systematic reviews/meta-analyses, or high-quality qualitative research containing explicit data on TCM, transcultural interventions, or digital health applications. Non-English literature and conference abstracts were excluded. After deduplication and independent blind review, 13 core English empirical articles were included for in-depth data extraction.

## 3. Theoretical Connotations and Global Health Paradigm Shift

In TCM philosophy, the "Unity of Human and Nature" materializes into two core nursing principles: "simultaneous

cultivation of body and spirit" (psychosomatic integration) and "tailoring interventions to individuals, times, and local conditions" (personalized environmental interaction). While traditionally reliant on face-to-face consultations, this philosophy is experiencing a paradigm shift. Modern evidence-based medicine has begun to validate the efficacy of these holistic concepts on a global scale, shifting TCM nursing from abstract philosophical discourse to quantifiable clinical standards, particularly when integrated with modern tele-nursing and digital health platforms.

# 4. Digital Empowerment: Granular Characterization in Transcultural Nursing

Digital technologies effectively break spatio-temporal and language barriers, acting as the most powerful execution vehicles for TCM holistic concepts. Table 1 summarizes the highly representative empirical studies extracted from the PubMed database.

**Table 1. Core empirical applications of TCM holistic concepts in digital transcultural nursing**

| Author, Year [Ref] | Participants (N) | Core Intervention Carrier | Mapped TCM Concepts | Core Outcome Measures |
|---|---|---|---|---|
| Ruan J, 2023 [2] | Depression (1448) | TCM integrated interventions | Cultivation of body & spirit | Depressive symptoms decreased (SMD = -2.05, P < 0.00001) |
| Zhang N, 2024 [3] | Heart failure (3660) | Nurse-led eHealth | Preventive treatment | Self-care improved (MD = 15.30, P < 0.05) |
| Zhuang M, 2025 [4] | COPD (2027) | Smart platforms + video | Movement & stillness | CAT scores improved (MD = -2.53, P < 0.001) |
| Wang J, 2026 [5] | Type 2 diabetes (17) | AI-HEALS precision system | Tailoring to individuals | Qualitative: Empowered practice, enhanced psychological adaptation |
| Hyatt A, 2022 [6] | Transcultural oncology | Multilingual QPLs + audio | Transcultural inclusion | Overcame language barriers, increased engagement |
| Zhang T, 2024 [7] | CINV (620) | eHealth system monitoring | Spleen/stomach care | Nausea severity reduced (MD = -7.687, P < 0.001) |
| Yao H, 2026 [8] | Pediatric oncology (2645) | mHealth tracking | Strengthening vital qi | Decreased PICC complications (OR = 0.16) |

## 4.1 Nurse-led Electronic Health and Outcome Improvement

TCM's emphasis on holistic nursing and preventive treatment has achieved significant results via eHealth. A meta-analysis of 1448 depression patients provided top-level evidence that TCM-based integrated health interventions possess a profound combined effect in reducing depressive symptoms (SMD = -2.05, 95% CI: -2.74 to -1.37, P < 0.00001) [2]. Furthermore, nurse-led electronic health interventions significantly improved self-care capabilities in 3660 chronic heart failure patients (MD = 15.30, P < 0.05) [3]. An online and offline dynamic health intervention model also significantly enhanced chronic disease patients' self-care agency and self-efficacy scores after six months [9].

## 4.2 Digital Rehabilitation and TCM Exercise Therapy

TCM Daoyin techniques combined with telerehabilitation exhibit immense potential. Video-guided exercise telerehabilitation significantly improved COPD patients' CAT quality of life scores at 12 months (MD = -2.53, P < 0.001) [4]. In a study of 3426 frail older adults, a "digital intervention + exercise" model significantly ameliorated frailty status (SMD = -0.52) and grip strength (WMD = 1.82) compared to usual care [10].

## 4.3 AI-driven Health Education and Cultural Adaptation

In multicultural scenarios, the emotional and "Culture" dimensions of technological support are vital for mobile psychological interventions [11]. A 2026 qualitative study revealed that the Artificial Intelligence-Based Health Education Accurately Linking System (AI-HEALS) translated abstract medical guidance into daily actions, empowering self-management and significantly enhancing patients' "psychological adaptation" [5]. For transcultural oncology patients with severe language barriers, multilingual Question Prompt Lists (QPLs) greatly increased medical participation and overcame communication obstacles [6].

# 5. Challenges in Cross-cultural Implementation and Management Countermeasures

## 5.1 Realities of Nurses' Transcultural Competence

Despite the potential of digital tools, the transcultural competence of nursing staff remains a bottleneck. The transcultural self-efficacy of 1,190 clinical nurses in Guizhou, China, was found to be generally at a moderate level, lacking high or low

extremes, and was significantly affected by demographic variables and the stability of working environments [12]. This quantifies the current talent shortfall in transcultural nursing and highlights the urgent need for targeted continuing education.

### 5.2 Reconstruction of Talent Training via Metacognitive Assessment

To fundamentally eliminate talent barriers, transcultural nursing education must integrate robust psychological and cognitive assessments. Cultivating transcultural adaptability relies heavily on nursing students' self-monitoring and cognitive reflection. Recent psychometric studies successfully translated and validated the Chinese version of the Metacognitive Awareness Scale (C-MAS), demonstrating excellent reliability (Cronbach's alpha = 0.963) and structural validity among 592 nursing students [13]. Nursing schools and healthcare institutions should adopt C-MAS as a standardized baseline evaluation tool to dynamically monitor students' self-reflection levels during transcultural theory learning, thereby precisely enhancing the cultural empathy of the next generation of nurses.

### 5.3 Innovation in Nursing Management and HIS

Digital health tools often experience gaps in transcultural adaptation (e.g., lack of language translation or religious taboo alerts). Management countermeasures should include: (1) Reconstructing nursing assessment indicators by formally listing "transcultural nursing metrics," linking quantitative performance to TCM emotional nursing implementation and multilingual education coverage. (2) Deep embedding into Hospital Information Systems (HIS). Drawing on the success of multilingual QPLs [6], management should embed "intelligent transcultural prompt modules" in HIS. When receiving patients from specific cultural backgrounds, the system should automatically push bilingual TCM nursing plans and cultural taboo warnings, safeguarding transcultural care safety at the technological level.

## 6. Conclusion

The TCM philosophy of the "Unity of Human and Nature" provides a profound theoretical framework for modern transcultural nursing. Rigorous scoping review data confirm that holistic nursing interventions based on this philosophy achieve concrete psychosomatic improvement outcomes in large-sample meta-analyses. In the digital age, AI systems and eHealth platforms provide powerful vehicles for breaking spatio-temporal barriers and actualizing personalized care. Facing the challenge of moderate transcultural competence among nurses, future efforts must utilize metacognitive assessment tools (C-MAS) to reconstruct training models. Top-level designs in hospital nursing assessments and HIS construction must be prioritized to promote the empirical value of TCM nursing in global health governance.

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## References

[1] Badanta-Romero B, Lucchetti G, Barrientos-Trigo S. Access to healthcare among Chinese immigrants living in Seville, Spain. Gac Sanit. 2021;35(2):145-152.
[2] Ruan J, Chen S, Liang J, et al. Traditional Chinese medicine-based integrated health interventions for depression: A systematic review and meta-analysis. J Clin Nurs. 2023;32(17-18):5632-5651.
[3] Zhang N, Li Q, Chen S, et al. Effectiveness of nurse-led electronic health interventions on illness management in patients with chronic heart failure: A systematic review and meta-analysis. Int J Nurs Stud. 2024;150:104630.
[4] Zhuang M, Hassan II, Ahmad WMA, et al. Effectiveness of Digital Health Interventions for Chronic Obstructive Pulmonary Disease: Systematic Review and Meta-Analysis. J Med Internet Res. 2025;27:e76323.
[5] Wang J, Wu Y, Jiang Y, et al. Experiences and Perceived Influence of the Artificial Intelligence-Based Health Education Accurately Linking System (AI-HEALS) on Health Behaviors Among Patients With Type 2 Diabetes: Qualitative Study. J Med Internet Res. 2026;28:e84605.
[6] Hyatt A, Lipson-Smith R, Gough K, et al. Including migrant oncology patients in research: A multisite pilot randomised controlled trial testing consultation audio-recordings and question prompt lists. Contemp Clin Trials Commun. 2022;28:100932.
[7] Zhang T, Zhao B, Chen Y, et al. Effectiveness of e-health interventions for chemotherapy-induced nausea and vomiting: a systematic review and meta-analysis. Support Care Cancer. 2024;32(10):672.
[8] Yao H, Wen Y, Wang H, et al. Effectiveness of Mobile Health Interventions in Pediatric Cancer: Systematic Review and Meta-Analysis of Randomized Controlled Trials. JMIR Mhealth Uhealth. 2026;14:e86836.
[9] Zhang Q, Yang C, Hu X. Impact of dynamic health intervention models through online and offline on self-efficacy and

quality of life among chronic disease patients. Technol Health Care. 2025;33(3):1258-1267.
[10] Liang MY, Cui JR, Fan X, et al. The effect of digital health interventions in older adults with frailty: a systematic review and meta-analysis. Int J Nurs Stud Adv. 2025;10:100470.
[11] Luo M, Yue Y, Du N, et al. Needs for mobile and internet-based psychological intervention in patients with self-injury and suicide-related behaviors: a qualitative systematic review. BMC Psychiatry. 2024;24(1):26.
[12] Li J, Wu B, He Z, et al. Investigation for the transcultural self-efficacy of nurses in Guizhou, China. Int J Nurs Sci. 2020;7(2):191-197.
[13] Li S, Xu J, Jia X, et al. Translation and psychometric validation of the Chinese version of the metacognitive awareness scale among nursing students. Front Psychol. 2024;15:1354810.

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