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Nurses' Experience Evaluation in Traditional and Complementary Medicine; A Systematic Review

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ABSTRACT

Aims The study seeks to ascertain the instruments used in research pertaining to the area under evaluation, as well as the validity of these instruments.

Information & Methods This scoping review is conducted using the PRISMA-SCR guidelines and utilized the Scoping Review Framework, which consists of five stages: identifying the research question, identifying relevant studies, study selection, data charting, and summarizing and reporting results. The review focused on assessing instruments used to evaluate nurses' experiences with Traditional and Complementary Medicine (T&CM). A literature search was conducted in March 2024 across six databases, including PubMed, ScienceDirect, and GARUDA, to identify studies published between 2014 and 2024.

Findings A total of 18 relevant studies from 12 countries across continents, with the majority from Asia, are included. The domains assessed include nurses' knowledge, attitudes, beliefs, practices, and communication related to T&CM. Although most instruments were validated, some studies did not report tests of validity and reliability.

Conclusion The instruments used to measure nurses' attitudes, knowledge, beliefs, practices, and communication regarding T&CM are primarily self-developed or adapted from previous research, with varied reliability and validity testing. Most studies focused on assessing attitudes and knowledge, while fewer addressed beliefs or communication.

Keywords Nurse; Instrument; Traditional Medicine; Alternative Medicine

CITATION LINKS

[1] WHO traditional medicine strategy ... [2] WHO global report on traditional and ... [3] Prevalence of use of traditional ... [4] Complementary and alternative medicine ... [5] Traditional and complementary medicine ... [6] Complementary and alternative ... [7] Factors influencing the use of complementary and ... [8] The use of complementary and alternative ... [9] Potential factors that influence usage of ... [10] The role of nurses in traditional-modern medicine ... [11] Attitudes and knowledge about direct ... [12] Transcultural nursing: Cultural competence ... [13] Complementary and integrative medicine ... [14] Considerations for complementary and alternative ... [15] The effect of transcultural nursing, child ... [16] A review of nurses' knowledge, attitudes ... [17] Nurses' attitudes towards complementary therapies ... [18] Care quality ... [19] PRISMA extension for scoping reviews ... [20] Scoping studies: Towards a methodological ... [21] Best practice guidance and reporting items for ... [22] The PRISMA 2020 statement ... [23] Rayyan-a web and mobile app for ... [24] Recommendations for the extraction ... [25] Iranian nurses' knowledge and attitude ... [26] Knowledge, attitude, and practices of ... [27] Knowledge, attitude, and practice of complementary ... [28] Development and validation of traditional ... [29] Perspectives of oncology nurses ... [30] Pediatric nurses' usage and experience ... [31] The capabilities of nurses for complementary ... [32] Registered nurses' communication ... [33] Complementary and alternative ... [34] Knowledge, attitude and use of complementary ... [35] Attitudes, beliefs, and practices ... [36] Israeli nurses' attitudes to the holistic ... [37] Complementary and alternative medicine ... [38] Nurses' knowledge, perceived barriers ... [39] A cross-sectional study on Swedish ... [40] Nurse practitioner knowledge, use ... [41] Nurses' knowledge and treatment ... [42] Developing a measure of treatment ... [43] Complementary and ... [44] Factors associated with nursing ... [45] Traditional medicine in the WHO ... [46] Surging cooperation with ASEAN ... [47] Integrating traditional and complementary ... [48] Traditional, complementary and ... [49] Questionnaires assessing the use of complementary ... [50] Nursing research: Generating a ... [51] COSMIN methodology for ... [52] Research design ... [53] Validity, reliability, and ... [54] Psychometric properties of instruments ... [55] The relationship of knowledge ... [56] Enhancing skill conceptualization, critical ...

Introduction

The concept of traditional, complementary, alternative, and integrative medicines is often used in healthcare delivery. The term "traditional medicine" (TM) is used in healthcare practices that have evolved over generations within a country, while "complementary medicine" (CM) or alternative is interchangeably used by some countries that do not include these practices in their national tradition [1]. Further, WHO defines traditional and complementary medicine (T&CM) as a combination of TM and CM, including products, practices, and practitioners [1].

Various countries have started to pay attention to the use of T&CM. According to the global report on T&CM in 2019, 98% of WHO member countries have policies related to T&CM [2]. The prevalence of T&CM use varies from 24-71.3% in the general population [3] and shows increased usage among children [4], adults [5], and the elderly [6]. These practices are used for various physical and psychological health issues [7, 8]. T&CM is considered holistic, and expectations of benefits are the main reasons for its use, although the scientific evidence remains debated [9].

The ongoing conflict between modern medicine and T&CM often shows that both can coexist, although modern medicine does not always support T&CM [10]. Doctors and nurses believe that combining complementary and conventional cancer treatments is risky [11]. Nurses, who have a fundamental responsibility to provide holistic care to a diverse patient population, need to be aware of T&CM [12]. A study showed that nurses are more familiar with and have more positive attitudes and beliefs toward T&CM, believing it has a more significant impact on patient care compared to other healthcare workers [13]. Nurses must be able to consider and provide information about T&CM in delivering patient care [14]. Nurses use a cultural perspective in their practice, since transcultural nursing contributes to the establishment and adaptation of healthy family units [15]. Specifically, nurses should be encouraged to learn more about the cultural needs of a diverse patient population and provide consistent care, thus evaluating nurses' experiences with T&CM is necessary.

Previous studies have reviewed how the practice of T&CM among nurses has been conducted in various countries [16, 17]. Furthermore, information about the instruments used is needed. Quality instruments play a crucial role in assessing nurses' experiences with multi-professional care that involves a holistic approach [18]. The assessment of T&CM use among nurses in many parts of the world has been addressed in earlier studies, but an important aspect of these studies remains unexplored. Quality instruments remain necessary in measuring how nurses deal with T&CM if any, while providing multi-professional, holistic, primary health care. However, as of now, there have been no comprehensive reviews of these instruments documented in the literature. It is important to bring greater attention to this omission since the use of Traditional and Complementary Medicine (T&CM) is growing globally, leading to an increased need for transcultural nursing care.

Medical policies and nursing management need excellent instruments in the collection of trustable data concerning nurses' experiences of working with T&CM. This is necessary in assessing the current practices, developmental needs, and improving techniques that would strengthen transcultural nursing skills. In the absence of such understanding, it is always very difficult, if not impossible, to make appropriate clinical decisions regarding T&CM incorporation in clinicians' education and practice and about the education of nursing such policies. Therefore, this scope review aims to provide an overview of the instruments used in recent research. These tools will be filtered and examined to inform researchers, educators, and health authorities as part of their considerations for the development of nursing in the field of T&CM.

Information and Methods

This review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-SCR) guidelines to enhance reporting quality and ensure fidelity in the review process [19]. The review used the Scoping Review Framework, which includes five stages; 1) identifying the research question, 2) identifying relevant studies, 3) study selection, 4) charting the data, and 5) collating, summarizing, and reporting the results [20].

Review question (stage 1)

The goals and questions of the scoping review were based on the Population, Concept, and Context (PCC) framework [21]. Furthermore, PCC is used in search keywords. The search keywords were: Population: Nurses OR nursing professionals OR clinical nurses; Concept: Assessment tool OR instrument OR scale OR questionnaire OR survey; And Context: Complementary therapy OR alternative medicine OR integrative healthcare or CAM OR complementary alternative medicine OR TCM OR traditional complementary medicine. The review question based on the PCC framework was: What is known from the literature about the assessment instruments used in evaluating the experience in T&CM among nurses? What domains are assessed by these instruments? Have the instruments been validated?

Identifying relevant studies (stage 2)

A comprehensive literature search was conducted in March 2024 on six databases: PubMed, ScienceDirect, DOAJ, Taylor & Francis, Wiley, and GARUDA (provides integrated access to institutional repositories, scholarly journals, theses, and diverse academic literature resources from Indonesia). In

addition, we checked the citations of the studies and reviews that were included and conducted a manual search.

All articles that conducted research using questionnaires on nurse populations to measure their views on T&CM were considered. Inclusion criteria were articles published within the last ten years (2014-2024), original papers, and full-text available. Exclusion criteria included non-English articles, theses, review articles, commentaries, conceptual, qualitative, and case studies. The article selection process followed the PRISMA checklist guidelines to enhance accuracy in article search [22].

Study selection (stage 3)

The PRISMA flowchart depicts the process, screening outcomes, and criteria for articles extraction following the initial search, which adhered to the study's inclusion and exclusion criteria (Figure 1).

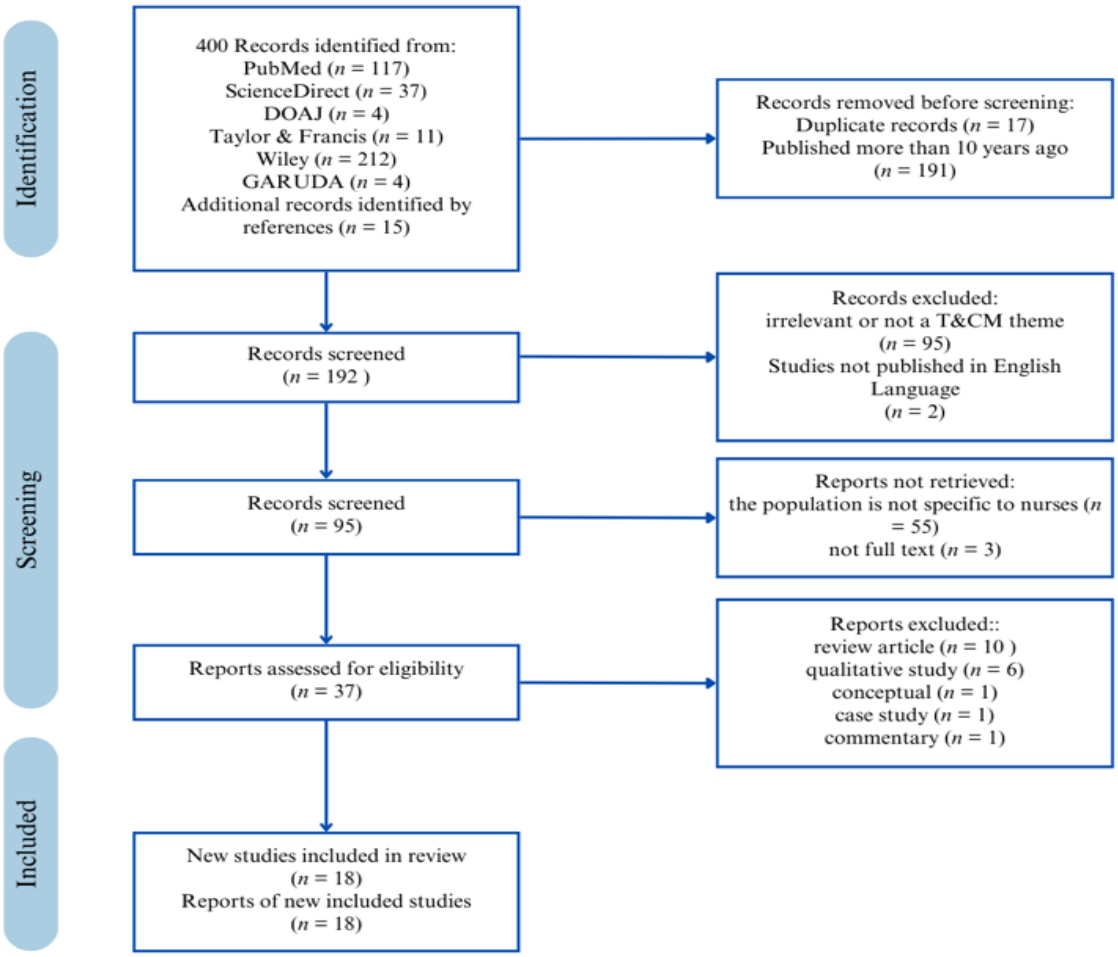

Figure 1. PRISMA flowcharts for study selection and inclusion

The abstracts found during the article search were retrieved using the reference manager software Mendeley and then transferred to the Rayyan software program to facilitate and record the article screening process [23]. In total, 400 pertinent abstracts were gathered from the 7 databases, and an additional 15 manuscripts identified by reference. After eliminating duplicates and articles published more than 10 years ago, 192 articles were retained. Articles were then screened, eliminating 382 articles, and 18 articles were included and deemed suitable for review.

Charting the data (stage 4)

This review utilized recommendations from The Joanna Briggs Institute for the extraction, analysis, and presentation of results in scoping reviews [24]. The data were extracted to incorporate crucial details such as the study site, research design, sample size, and the instruments used in the study.

Findings

Characteristics of the studies

This review found that the majority of articles were conducted in Asia (55.6%), followed by the Americas (16.7%), then Europe (11.11%), Australia (11.11%), and Africa (5.5%). Most (15 studies) used a survey design, only one study employed instrument development, and two studies used a descriptive design. Most studies were implemented in hospitals (n=11) and 7 others in various settings. The average sample size was 354 nurses. The used sampling methods included convenience sampling (n=13), purposive sampling (n=2), simple random sampling (n=2), and total sampling (n=1; Table 1).

Table 1. Extracted data from the final documents

Author, year, country, continent	Study design	Sample characteristic sampling method, setting	Instrument	Domain/ category (items)	Response options	Measurement properties	
						Validity	Reliability
Dehghan *et al.*, 2022, Iran, Asia [25]	A cross-sectional study	N=267; Mean age=33.90 (SD=8.66); 92.1% female; Convenience sampling; Hospital	Knowledge about the CAM and attitude toward CAM questionnaire	Knowledge (13 items)	5-point Likert scale	Content validity	Internal consistency (α: 0.92)
				Attitude (13 items)	5-point Likert scale	Content validity	Internal consistency (α: 0.78)
Makarem *et al.*, 2022, Lebanon, Asia [26]	A descriptive survey	N=80; Most were between 31 and 39 years old; 62.3% female; Purposive sampling; Hospital	Modification from previous studies	Knowledge	4-points	Face validity	-
				Practice	-	Face validity	-
			NrCAMK&A	Attitude	7-points	Content Validity	Internal consistency (α: 0.81)
Zeighami & Soltani-Nejad, 2020, Iran, Asia [27]	Descriptive study	N=233; Mostly <26 years old; 90.1% female; Convenience sampling; Hospital	Self-designed questionnaires by the researchers	Knowledge (13 items)	5-point Likert scale	Content validity	Internal consistency (α: 0.91)
				Attitude (13 items)	5-point Likert scale	Content validity	Internal consistency (α: 0.98)
				Practice (13 items)	4-point Likert scale	Content validity	Internal consistency (α: 0.85)
Chang *et al.*, 2019, China, Asia [28]	Instrument development	N=755; Mean age=34 (SD=7.19); 98.4% female; Convenience sampling; Various settings	Attitudes towards patient's use of traditional & complementary medicine (APUTCM)	Cognitive component (4 items)	7-point Likert scale	Face validity, content validity, construct validity	Internal consistency (α: 0.88)
				Affective component (4 items)	7-point Likert scale		
				Behavioural component (5 items)	7-point Likert scale		
		-	Communicative Competence in Traditional & Complementary Medicine (CCTCM)	Sustainability (2 items)	7-point Likert scale	Face validity, content validity, construct validity	Internal consistency (α: 0.84)
				Performance (3 items)	7-point Likert scale		
Metin *et al.*, 2018, Türkiye, Asia [29]	A cross-sectional descriptive survey	N=127; Mean age=33.03 (SD=6.69); 97% female; Total sampling; Hospital	The questionnaire of knowledge and attitudes of nurses to CAM (Self-designed questionnaires by the researchers)	Knowledge	3-points	Content validity	Internal consistency (α: 0.81)
				Perception about effects	3-points		
				Attitude	4-points Likert scale		
Cırık & Efe, 2018, Türkiye, Asia [30]	A descriptive survey	N=1450; Mostly >31 years old; Mostly female; Convenience sampling; Various settings	Self-designed questionnaires by the researchers. Data were collected using a semi-structured questionnaire that was developed in accordance with the literature	Practice (7 items)	Use=2-point; Knowledge= 2-point; Benefit=2-points; Ask about CHA to patient=3 points; Recommendatio: 3-points	Face validity	-
				Attitude (8 item)	7-point Likert scale	Face validity	-
Gyasi *et al.*, 2018, Ghana, Africa [31]	A cross-sectional survey	N=210; Mostly >29 years old; 80.5% female; Convenience sampling; Hospital	Adaptation of the CTM Needs Assessment tool to measure knowledge, and practices/usage of CTM. Adaptation of the CHBQ to measure attitudes	Knowledge (18 items)	4-point Likert scale	Face validity	Internal consistency (α: 0.865)
				Practice or usage (18 items)	4-point Likert scale	Face validity	Internal consistency (α: 0.872)
				Attitude (22 items)	5-point Likert Scale	Face validity	-
Hall *et al.*, 2018, Australia, Australia [32]	A cross-sectional online survey	N=614; Mostly >50 years old; 94% female; Convenience sampling; Various settings	Self-designed questionnaires by the researchers	Communication	5-point Likert Scale	Face validity; Content validity	-
				Attitude	5-point Likert Scale		
				Knowledge	5-point Likert Scale		

Continue of Table 1 from the last page.

Shorofi & Arbon, 2017, Australia, Australia [33]	Descriptive study	N=322; Most were between 31 and 39 years old; 90.1% female; Convenience sampling; Hospital	Self-designed questionnaires by the researchers	Practice or usage	2-points and continued with and if the answer is yes, continue with 4-points	Face validity; Content validity	Internal consistency (α: 0.929)
				Knowledge	4-points	Face validity; Content validity	Internal consistency (α: 0.929)
				Attitude	5-points Likert-type scale	Face validity; Content validity	Internal consistency (α: 0.929)
Balouchi *et al.*, 2016, Iran, Asia [34]	A cross-sectional descriptive survey	N=157; Mean age=23.4 (SD=4.05); 34.4% female; Convenience sampling; Hospital	Self-designed questionnaires by the researchers	Knowledge (11 items)	2 points	-	Internal consistency (α: 0.87)
				Attitudes (11 items)	5-point Likert scale)	-	Internal consistency (α: 0.75)
				Use (11 items)	3-point Likert-type scale	-	Internal consistency (α: 0.67)
Van Vliet *et al.*, 2015, Netherlands, Europe [35]	A cross-sectional descriptive survey	N=355; Most were between 46 and 55 years old; 91% female; Convenience sampling; Various settings	Instrument modified from a self-reporting questionnaire used in previous research among healthcare professionals and managers in the Netherlands	Attitude (6 items)	Familiar with IM Importance of IM.	Face validity	-
				Belief (13 items)	4-point Likert scale	Face validity	-
				IM practices in nursing (4 items)	2-8 points	Face validity	-
Orkaby & Greenberger, 2015, Israel, Asia [36]	A cross-sectional correlational study	N=213; Mean age=38.65; 91.5% female; Convenience sampling; Hospital	The complementary and alternative medicine health belief questionnaire (CHBQ-CAM)	Attitudes toward the holistic approach (10 items)	7-point Likert-type scale	Criterion validity	Internal consistency (α: 0.70)
			Perspectives on the use in communities of CAM questionnaire (PUC-CAM-Q) [37].	Attitudes toward the biomedical approach (8 items)	7-point Likert-type scale	Content validity	Internal consistency (α: 0.74)
Kim *et al.*, 2016, South Korea, Asia [38]	A cross-sectional survey	N=170; Mean age=29; Mostly female; Convenience sampling; Various settings	Questionnaire to measure knowledge adopted from another study	Knowledge of CAM (33 items)	4-point Likert scale	Content validity	Internal consistency (α: 0.92)
			Questionnaire to identify barriers was self-designed	Perceived barriers (10 items)	4-point Likert scale	Content validity	Internal consistency (α: 0.83)
			Nurse complementary and alternative medicine knowledge and attitude (NrCAM K&A)	Practice (9 items)	4-point Likert scale	Content validity in the previous study(Rojas-Cooley & Grant [37])	Internal consistency (α: 0.87)
Jong *et al.*, 2015, Sweden, Europe [39]	A cross-sectional descriptive survey	N=335; Mean age=45.5 (SD=11.5); 84.2% female; Simple random sampling; Various settings	The questionnaire was modified from previous research that studied attitudes towards complementary therapy by pediatricians in the Netherlands	CAM practices in nursing (13 items)	3-points	Face validity	-
				Belief (7 items)	5-points Likert-type scale	Face validity	-
				integrating CAM with conventional medicine (13 items)	4-points	Face validity	-
				Knowledge (13 items)	4-points Likert-type scale	Face validity	-
Geisler *et al.*, 2015, United States, America [40]	Mixed-method cross-sectional online survey	N=410; Mean=48 (SD=10.81); 96% female; Convenience sampling; Various settings	Self-designed questionnaires by the researchers (17 questions)	Knowledge	3-points Likert scale	Face validity	-
				Beliefs of effectiveness	4-points points Likert scale		
				Use	2 points		
				Referrals	2 points		

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Brewer *et al.*, 2019, United States, America [41]	A cross-sectional descriptive survey	N=218; Mean age=39; 85.2% female; Convenience sampling; Hospital	Complementary and alternative medicines and beliefs inventory (CAMBI) [42]	Natural treatments (6 items) Participation in treatment (5 items) Holistic health (6 items)	5-point Likert scale 5-point Likert scale (strongly) 5-point Likert scale	Criterion and congruent validity from previous study	Internal consistency (α: 0.75)
Siedlecki, 2021, United States, America [43]	A cross-sectional online survey	N=181; Mean age=44.62 (SD=15); 94% female; Simple random sampling; Various settings	Self-designed questionnaires by the researchers	No domain	-	Face validity; Content validity	-
Kusunoki *et al.*, 2023, Japan, Asia [44]	A cross-sectional descriptive anonymous survey	N=451; Most were between 30 and 39 years old; 94.9% female; Purposive sampling; Hospital	Self-designed questionnaires by the researchers	Respecting the patients' hopes Protect the patient from adverse events Supporting patients and their families to communicate openly Actively work on patients' challenges related to CAM usage Share and discuss patient CAM use	4-points Likert scale 4-points Likert scale 4-points Likert scale 4-points Likert scale 4-points Likert scale	Face validity	Internal consistency (α: 0.91)

Description of the instruments

Most of the studies (n=11) used instruments self-developed by researchers, five parts of the study instruments adopted from previous research, while the rest were adapted from earlier studies. Each instrument along with the attributes being measured. Most instruments evaluated nurses' attitudes towards T&CM (n=12), knowledge (n=11), and practices (n=11), while relatively few assessed beliefs (n=4) and communication (n=3; Table 2).

Nurses' attitudes towards T&CM

12 out of 18 studies measured nurses' attitudes toward T&CM [25-36]. These studies used self-designed instruments (n=8), adaptations of the same instrument, namely The Complementary and Alternative Medicine Health Belief Questionnaire (CHBQ-CAM; n=2), adoption from previous research (n=2), and the Nurse Complementary and Alternative Medicine Knowledge and Attitude (NrCAM K&A) developed by Rojas-Cooley & Grant [37] (n=1). Most studies (n=11) used Likert scales, predominantly a 5-point scale. Eight studies reported question items on attitude measurement, with question items ranging from 6 to 22 items. One study did not report a validity test, while others used face validity (n=3), content validity (n=4), face validity and content validity (n=3), face, content and construct validity (n=1), and criterion validity (n=1). Additionally, five studies did not report reliability tests. A total of eight studies reported reliability tests, all using Internal Consistency with Cronbach's α values ranging from 0.70 to 0.92. Most of the instruments inquired about the effects of T&CM modalities (n=4), followed by items questioning attitudes towards T&CM (n=3), the potential implementation of T&CM within their organizations (n=1), beliefs and practices (n=1), and aspects of cognitive, affective, and behavioral components (n=1).

Nurses' knowledge of T&CM

Out of 18 studies, 11 measured nurses' knowledge of T&CM [25-27, 29, 31-34, 38-40]. Instruments used in these studies were self-designed (n=6), adopted from previous research (n=2), and modified from previous research (n=3). Five studies used Likert scales, most commonly a 5-point scale. Only six studies reported question items in the knowledge measurement, with question items ranging from 11 to 13 items. One study did not report a validity test, and others used face validity (n=4), content validity (n=4), face and content validity (n=2). Additionally, four studies did not report reliability tests. A total of eight studies reported reliability tests, all using Internal Consistency with Cronbach's α values ranging from 0.81 to 0.92. In order to assess knowledge, most instruments asked the nurses to self-rate their level of knowledge on T&CM modalities (n=9), followed by their level of familiarity with T&CM modalities and how easy it is to obtain information about those modalities (n=1), with training primarily focusing on T&CM modalities (n=1).

Nurses' beliefs about T&CM

A total of four studies measured nurses' beliefs about T&CM [35, 39-41]. These studies used instruments modified from previous research (n=3) and self-

designed (n=1). Two studies reported question items on belief measurement, with 7 and 13 items. Only one study reported a validity test from previous research using Criterion and congruent validity (Complementary and Alternative Medicines and Beliefs Inventory (CAMBI) by Bishop *et al.* [42]). Only one study reported a reliability test using Internal Consistency with Cronbach's α: 0.75. To assess beliefs, the questions in the instrument are nurses' beliefs regarding T&CM (n=2), the nurses' confidence in T&CM (n=1), and about the effectiveness of the T&CM modalities (n=1).

Practice and use of T&CM

A total of 13 studies measured the practice and use of T&CM among nurses [26, 27, 30, 31, 33-35, 38-40, 43]. Most studies (n=6) used self-designed instruments, followed by modified instruments (n=3), and then adapted NrCAM K&A (n=2).

Most studies used frequency response options for T&CM use among nurses. Seven studies reported question items on practice measurement, with question items ranging from 4 to 18 items. One study did not report a validity test, while others used face validity (n=6), content validity (n=2), face validity and content validity (n=2). Additionally, six studies did not report reliability tests. A total of five studies reported reliability tests, all using Internal Consistency with Cronbach's α values ranging from 0.67 to 0.92. To measure the practices and use of T&CM, the instrument asked about the nurses' self-rated frequency of practice on T&CM modalities (n=7), self-rating regarding CAM-related nursing practice (n=1), personal and professional use and perceived barriers to T&CM use in practice (n=1), experience using T&C modalities (n=1), active nursing practice regarding T&CM and perceived barriers (n=1), the effects of T&CM, T&CM practice, and T&CM utilization that have been experienced (n=1), and experience in the use and referral of modalities of T&CM (n=1).

Communication of T&CM

A total of three studies measured communication and the use of T&CM among nurses [28, 32, 44]. All studies used self-designed instruments and Likert scales (4, 5, and 7-point scales). Two studies reported question items on communication measurement, with 5 question items. All studies reported validity tests with face validity (n=1), face and content validity (n=1), and face, content and construct validity (n=1). Additionally, one study did not report a reliability test. A total of two studies reported reliability tests, both using Internal Consistency with Cronbach's α values of 0.88 and 0.91. The instrument includes questions about nurses initiating T&CM discussions with patients and communicating with the healthcare team about the patient's disclosure of T&CM use (n=1), along with a competency scale for discussing T&CM with patients (n=1).

To measure communication, the instruments used inquire about nurses' initiation of T&CM discussions with patients and communication with the healthcare team regarding patients' disclosure of T&CM use (n=1), as well as a competence scale for communicating about T&CM with patients (n=1).

Table 2. Instruments from included studies classified by TCM attribute among nurses

Source	Attitudes towards T&CM	Nurses' knowledge of T&CM	Nurses' beliefs about T&CM	Practice and use of T&CM	Communication of T&CM
Dehghan *et al.* [25]	The attitude of nurses towards the effects on 19 modalities of T&CM	The nurses self-rated their level of knowledge on 19 modalities of T&CM	-	The nurses self-rated their practice frequency on 19 T&CM modalities	-
Makarem *et al.* [26]	Assesing belief and practice towards T&CM	The level of familiarity with T&CM modalities and how easy it is to obtain information about those modalities	-	The tendency to refer patients to T&CM practitioners, discussions about T&CM with patients, the potential impact of evidence-based T&CM implementation, and support for evidence-based T&CM	-
Zeighami & Soltani-Nejad [27]	The attitude of nurses towards the effects on 13 modalities of T&CM	The nurses self-assess their level of knowledge on 13 modalities of T&CM	-	The nurses self-rated their practice frequency on 13 T&CM modalities	-
Chang *et al.* [28]	Cognitive, affective, and behavioural component	-	-	-	A competence scale for communicating about T&CM with patients
Metin *et al.* [29]	Attitude s on T&CM methodes, responsibilities in T&CM, and sugestions to extend use of T&CM methods	The nurses self-rated their level of knowledge on 18 modalities of T&CM	-	-	-

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Cırık & Efe [30]	Attitudes toward effects, safety, and availibility of T&CM	-	-	Experience using T&C modalities	-
Gyasi *et al.* [31]	Attitudes toward T&CM	The nurses self-rated their level of knowledge on 18 modalities of T&CM	-	The nurses self-rated their practice frequency on 18 T&CM modalities	-
Hall *et al.* [32]	Attitudes toward T&CM	Training had focused primarily on T&CM modalities	-	-	Nurses' initiation of T&CM disscussions with patients and communication with health care team regarding patient's disclosure of T&CM use
Shorofi & Arbon [33]	The nurses self-rated their level of attitude toward T&CM	The nurses self-rated their level of knowledge of T&CM	-	The nurses self-rated their practice frequency on 18 T&CM modalities	-
Balouchi *et al.* [34]	Attitudes about varied modalities of T&CM/effective for improvement of patients	The nurses self-assess their level of knowledge on 11 modalities of T&CM	-	The nurses self-rated their practice frequency on 11 T&CM modalities	-
Vliet *et al.* [35]	The potential implementation in the organization and the assumption that T&CM complements healthcare services	-	Beliefs regarding T&CM	The nurses self-rated their practice frequency of T&CM modalities	-
Orkaby & Greenberger [36]	Attitudes toward holistic approach	-	-	-	-
Kim *et al.* [38]	-	The nurses self-rated their level of knowledge of T&CM	-	Active nursing practice regarding T&CM and perceived barriers	-
Jong *et al.* [39]	-	The nurses self-rated their level of knowledge and need for further knowledge on 13 modalities of T&CM	The nurses' confidence in T&CM	The effects of T&CM, T&CM practice, and T&CM utilization have been experienced	-
Geisler *et al.* [40]	-	The nurses self-rated their level of knowledge on 28 modalities of T&CM	Beliefs about the effectiveness of the 28 T&CM modalities	Experience in the use and referral of 28 modalities of T&CM	-
Brewer *et al.* [41]	-	-	Asses beliefs about natural treatments, the importance of participation in treatment, beliefs about holistic health	-	-
Siedlecki [43]	-	-	-	Personal and profesional use and perceived barriers to T&CM use in practice	-
Kusunoki *et al.* [44]	-	-	-	Self-rated about CAM related nursing practice	-

Discussion

From the 18 studies identified, the measuring tools used to evaluate nurses in T&CM consisted of domains such as knowledge, attitude, beliefs, practice, and communication. The diversity of domains assessed indicated that T&CM is a broad and continually evolving theme across various countries. The study came from all the continents from 12 countries; Japan, Iran, United States, Australia, Turkey, China, Israel, South Korea, Lebanon, Netherlands, Sweden, and Ghana. Studies on this topic is conducted in several nations, considering the implementation of Traditional and Complementary Medicine (T&CM) based on country-specific WHO data, which may vary between regions [2]. This underscored the relevance and importance of this theme.

Most studies were conducted in Asia (55.6%). This is based on the fact that T&CM was initially used empirically and developed in every culture or tribe [2]. This is related to the fact that continents with strong traditions, biodiversity, local knowledge, as well as regulatory support and research publications are mainly found in Asia [45, 46]. Recent research has

demonstrated the increasing integration of T&CM into healthcare systems throughout Asia, which supports this trend [47]. Nevertheless, the limited representation of Africa (5.5%) indicated a necessity for additional research in this region, particularly considering the pervasive use of traditional medicine in numerous African countries [48].

The prevalence of self-developed instruments (61.1%) in the reviewed studies raised questions about the comparability and standardization of measurements across different contexts. Recent literature on healthcare measurement tools has highlighted this issue [49]. The absence of standardized, validated instruments tailored to nurses' experiences with T&CM represented a significant gap in the field. We identified only two questionnaires specifically applied to nurses: NrCAM K&A by Rojas-Cooley & Grant [37], assess Attitudes towards Patient's Use of TCM (APUTCM) and to measure a Communicative Competence in TCM (CCTCM) [28].

These instruments were developed considering that evaluating nurses' knowledge, attitude, and communication in T&CM will assist nurses in their self-development to meet the diverse cultural needs of patient populations. Instrument content, particularly those measuring attitudes and knowledge, tends to focus on self-rated familiarity with T&CM modalities. While this approach provided insight into nurses' perceived competence, it may not accurately reflect their actual knowledge or skills. The objective measurement of T&CM knowledge among healthcare providers often differs from the self-reported measures [17].

This review identified that most instruments have been validated, although face validity was commonly used. Face validity is not considered strong evidence of validity, but it can be useful when combined with other types of validity [50]. There were studies that only conducted a validity test on the instruments used, while others combined it with content, construct, criterion, congruent validity. When choosing an instrument, content validity is regarded as the most crucial measuring quality to take into account [51]. If the content of an instrument accurately represents a construct, then the instrument is more likely to successfully achieve its measuring goals [50]. However, it is important or better to perform validity from various types, such as content, construct, and criterion validity [52].

Valid, reliable, and acceptable tools are necessary for registered nurses working in healthcare services [53]. In this review, compared to validity tests (n=1), more studies did not report reliability tests (n=7). For reliability, most studies calculated the internal consistency through Cronbach's alpha, with values ranging from 0.67 to 0.92. The most important form of reliability for multi-item instruments is the internal consistency of the instrument, and the internal consistency of scales is measured with Cronbach's alpha, which ranges from 0 to 1, with optimal values ranging from 0.7 to 0.9 [52]. Most of the studies used a design that appears to combine several instruments to examine various variables in nurses in T&CM. When modifying an instrument or combining instruments in a study, the original validity and reliability may not apply to the new instrument, making it important to establish validity and reliability during the upcoming analysis [50, 52].

To our knowledge, there has not yet been a scoping review focused on instruments with the theme of T&CM specifically among nurses. This review has identified studies globally involving nurse samples. Regarding constraints, T&CM covers a very broad scope, and the use of the term T&CM varies from one language to another and even from one region to another. Utilizing other databases, adjusting the time window, or selecting different languages may result in the discovery of more tools.

Conclusion

The instruments used to measure nurses' attitudes, knowledge, beliefs, practices, and communication regarding T&CM are primarily self-developed or adapted from previous research, with varied reliability and validity testing. Most studies focused on assessing attitudes and knowledge, while fewer addressed beliefs or communication.

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