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ORIGINAL RESEARCH

Cupping therapy in nursing higher education. How is it implemented in indonesia?

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Abstract

Cupping therapy is one of the most practiced Traditional Complementary Alternative Integrative (TCAI) therapies in Indonesia. It is important for educational institutions to integrate cupping therapy into higher education curricula in Indonesia. This will equip future healthcare professionals with the knowledge and skills to safely and effectively incorporate the practice. However, there is a lack of studies on how this therapy is incorporated into curricula in Indonesia. Therefore, this study aims to explore the inclusion of cupping therapy in nursing higher education curricula in Indonesia; specifically, whether such courses are available, how they are structured and delivered, and to identify other relevant information. A quantitative descriptive cross-sectional research design was utilized in this study to achieve the research objectives. The instrument used was a questionnaire about the cupping therapy curriculum, which was developed, tested, and validated prior to the commencement of the study. The tools consist of availability, aims and objectives, content organization, teaching methods, assessment and evaluation, curriculum communication, and process management. The data were collected from June 2022 to February 2023 from Muhammadiyah-affiliated nursing higher education institutions across Indonesia. A total of 42 institutions, comprise 70 nursing programs participated in the study. Ethical clearance was obtained from the Faculty of Health Sciences, Universitas 'Aisyiyah, Yogyakarta, Indonesia. The findings highlighted that preserving local wisdom, accommodating public needs, and enhancing graduates with additional competencies were recognized by most participants as the main reasons for including cupping therapy in the curriculum. Most nursing programs incorporate cupping therapy as a subject within broader courses such as Holistic Nursing and Entrepreneurship. The integration of the cupping therapy curriculum has been implemented in Indonesia, though variations exist among nursing programs. At last, nursing education curricula should give greater attention to TCAI therapies including cupping therapy.

Keywords: Complementary and alternative medicine, cupping therapy curriculum, cupping therapy, holistic nursing, nursing education, nursing program development

Introduction

Cupping therapy is a recognized modality of care within the traditional, complementary, alternative, and integrative (TCAI) healthcare discipline (World Health Organization, 2019). From the viewpoint of history, cupping is an ancient therapy with roots tracing back to ancient Egypt (1550 BC) as documented in the Ebers Papyrus (Qureshi et al., 2017). Records of cupping in Europe date back to the 14th to 17th centuries, a period coinciding with the Renaissance (Aboushanab & AlSanad, 2018). The therapy was developed and practiced in various civilizations and generated its uniqueness (Al-Bedah et al., 2019). Cupping therapy can be categorized into two forms: wet and dry cupping (Shen et al., 2022). Dry cupping is commonly practiced in East Asia, whereas wet cupping has a stronger presence in the Middle East (Al Bedah et al., 2016). The benefits of cupping for health have been published in many literatures. For example, a systematic review showed potential benefit on pain conditions, herpes zoster and other diseases (Cao et al., 2010). Another review recommended that cupping therapy may benefit patients with stroke (Kim & Han, 2021). Additionally, a study found that cupping therapy can reduce symptoms of chronic back pain (Moura et al., 2018). Randomized trials posited that cupping therapy is an

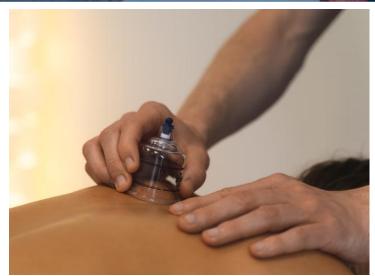


Figure 1. Illustration of cupping therapy (Courtesy of www.unsplash.com).

effective ailment for acne vulgaris (Tabatabaei et al., 2021) and fibromyalgia (Karacaoglu et al., 2024). Cupping therapy may be beneficial in improving ankle Range of Motion (ROM) in patients with mobility impairments (Schaub et al., 2024).

The 2023 Indonesian Health Survey (Survei Kesehatan Indonesia or SKI) was the first national health survey to document on the use of cupping therapy as a specific modality (Figure 1). The survey found that cupping therapy was utilized by approximately 4.2% of participants (Kementerian Kesehatan, 2024). In previous surveys, such as the 2018 Riset Kesehatan Dasar (Riskesdas), cupping therapy was not reported individually but instead grouped under the broader category of "Manual Skills therapies (Kementerian Kesehatan, 2018). As the majority of Indonesia's population is Muslim, cupping is widely embraced due to its spiritual value (Syahruramdhani et al., 2020). Hijama or prophetic wet cupping is part of the sunnah

that reflecting the direct teachings of Prophet Muhammad (Hammad et al., 2022)

A study highlighted good public perception regarding cupping in different areas of Indonesia (Syahruramdhani & Fadhlurrahman, 2021). Research has shown that patients report higher satisfaction with healthcare services when cupping is used by their healthcare providers (Idwar et al., 2019). Despite extensive research on cupping therapy in Indonesia—covering its cultural significance (Stark, 2022), bibliographic patterns (Wahyuni & Salim, 2023), clinical results (Parawansa et al., 2020; Lestari et al., 2022; Sutysna et al., 2024), and advancements in cupping methodologies (Wahyuni, 2022)—a deficiency persists concerning its incorporation into nursing education. The majority of current work emphasizes therapeutic outcomes or socio-cultural importance, but fails to examine the instruction, comprehension, or implementation of cupping therapy within nursing curriculum. As interest in TCAI therapies expands, health professionals are crucial in supporting informed decision-making and maintaining the safety and quality of cupping practices (Riet et al., 2011; Wu et al., 2023). In Indonesia, the practice of cupping therapy is regulated by the Ministry of Health, specifically under Traditional Health Services General Directory (Direktorat Pelayanan Kesehatan Tradisional or Diryankestrad). According to Law Number 38 of 2014 concerning Nursing, nurses are authorized to implement complementary and alternative nursing practices (Wirentanus, 2019). Further supporting this, the Indonesian Holistic Nurse Association (IHNA) (Himpunan Perawat Holistik Indonesia or HPHI) as a sub-organization of the Indonesian National Nurse Association (INNA) (Persatuan Perawat Nasional Indonesia or PPNI), released a training module titled "Basic Cupping Therapy" in 2019 (Samiasih et al., 2019).

With their extensive patient interactions, Indonesian nurses require adequate training in TCAI therapies to deliver comprehensive care. However, in the present times, nurses are more likely to use interventions recommended or learned during their undergraduate and graduate education (Siedlecki, 2021). Consequently, it is not surprising that they have limited mastery of TCAI, especially since its use is not heavily emphasized in Indonesia's nursing curriculum of higher education (Christina et al., 2019). On the other hand, findings from various TCAI studies encourage integrating TCAI content into existing nursing higher education curricula (Cooke et al., 2012; Siedlecki, 2021; Gutiérrez-Sanchéz et al., 2024). Available evidences in some countries were considered important sources of TCAI knowledge, but they were inadequate to support evidence-based decision-making in nursing (Balouchi et al., 2018; Siedlecki, 2021). When resources fall short of supporting evidence-based decision-making, it is typically because they lack rigor and quality. Many available materials might be anecdotal, opinion-based, or derived from studies with methodological weaknesses which cannot meet the standards of high-quality for evidence-based practice. This study is important for exploring the implementation of cupping therapy within Indonesian nursing higher education. Also, it can identify and highlight inconsistencies and gaps in curriculum delivery and competency development. The conclusions drawn from this investigation are also applicable beyond Indonesia, as many nursing students in another country lack understanding of TCAI. For example, In Europe, nursing students are not taught about TCAI (Gunnarsdottir et al., 2022). Furthermore, nurses are not educated on how to effectively communicate about patients' complementary health-seeking behaviors,

nor how to integrate TCAI into their practice. The findings would provide vital evidence for nurse educators and policymakers to evaluate existing standards, improve structural education, and develop curriculum for TCAI therapies.

Method

This study used a quantitative descriptive cross-sectional research methodology to investigate the integration of cupping therapy in nursing curricula at Indonesian higher education institutions. This design was suited for gathering a wide overview of current curricular practices across different institutions at a single point in time, rather than attempting to demonstrate causality (Capili, 2021). The study's direction is to assess whether cupping therapy is incorporated into the curriculum. The process evaluates how cupping therapy is structured and administered within the curriculum. Additional information was acquired regarding the rationale, educational tactics, and institutional considerations for integrating cupping therapy. The population of the study were major academic representatives from nursing programs connected with the Association of Nursing Education Institutions of Muhammadiyah-'Aisyiyah (AIPNEMA). According to data obtained from the administrative office of the AIPNEMA, there are currently 42 nursing education institutions under its coordination across Indonesia. This study focused on institutions connected with AIPNEMA due to their distinct organizational structure and shared principles, which emphasize Islamic perspectives in nursing education. Concentrating on this group allowed for an in-depth examination of curricular changes and viewpoints within a relatively homogeneous, yet prominent, segment of Indonesian nursing education. The AIPNEMA administrative office provided a complete list of institutional members. Each institution was contacted by phone to invite participation and identify qualified responders, who included academic deans, curriculum coordinators, faculty members, and nursing program heads. The study used a purposeful, census-style sampling strategy to achieve full representation by inviting all eligible AIPNEMA-affiliated institutions. With this approach, no formal sample size calculation was required. Therefore, a total of 70 nursing programs participated in the study. Invitations were then extended to each institution to participate in the study. Upon agreement, each institution identified and selected representatives, including Deans, curriculum coordinators, faculty members, and nursing program principals, to take part in the research.

The questionnaire used in this study was developed based on Harden's framework for curriculum analysis, which provides a structured approach to examining educational content, delivery, and outcomes (Harden, 1986). Before implementing it with participants, the researchers drafted the questionnaire based on that framework. After that, the researchers contacted national experts of nursing education to review the draft. The three experts are faculty members from Universitas Muhammadiyah Yogyakarta. They were chosen for their acknowledged expertise and substantial experience in nursing education and curriculum development. The decision to include only three experts was driven by the qualitative nature of the review process, which emphasized in-depth, targeted feedback from a select group of highly specialized experts rather than a large number of participants. The review process lasted two weeks that allowing for a thorough and thoughtful evaluation of the proposed curriculum's content and structure. After the review was completed, there were no significant changes made to the initial draft or the agreed-upon questionnaire.

The questionnaire of the study consists of 15 questions with 6 domains including course availability (4 questions), objectives and aims (2 questions), content organization (3 questions), teaching methods (3 questions), assessment and evaluations (2 questions) and curriculum communication (1 question). The questions are cupping lecture topics, cupping lecture topics were taught on campus, reasons for not teaching cupping lecture topics, reasons for not teaching cupping lecture topics anymore, cupping lecture topics are held, how the course is, the number of credit units or hours allocated for cupping lecture topics in one semester, core competencies of cupping lecture topics, teaching methods used, cupping subtopics taught, details of the cupping curriculum are delivered to lecturers, students, and stakeholders, the reason of cupping lecture topics are taught, student assessment methods, program evaluation methods, and the person responsible for managing the cupping course at the study program level. After preparing the questionnaire in both English and Bahasa Indonesia, it underwent expert review, testing, and validation, and was subsequently finalized for distribution. A validation process utilizing the Content Validity Index (CVI) was done to confirm the content validity of the questionnaire in this study. Three specialists in nursing education and curriculum development were requested to evaluate the pertinence of each item utilizing a 4-point scale. The Item-level Content Validity Index (I-CVI) was determined by dividing the count of experts who rated the item as relevant by the total number of experts. The score on the Scale Content Validity Index (S-CVI) was satisfactory with 0.82, reflecting the tool's readiness for use in the study.

The data collection process began with participant identification and recruitment. Nursing programs affiliated with AIPNEMA were selected due to their organized structure and relevance to the study's objectives. AIPNEMA's administrative office provided a list of member institutions, which were contacted via phone or email to introduce the study and identify potential participants, including Deans, senior faculty members, and nursing program leaders.

Electronic informed consent was obtained from willing participants. The second stage involved survey distribution and data collection. From June 2022 to February 2023, the finalized questionnaire was administered online via a secure Google Form link. Participants were required to fill the full name and institutional affiliation. To verify eligibility, the researchers checked whether they were deans, senior faculty members or nursing program leaders. Regular reminders were sent to optimize participation. The survey included both structured items (multiple-choice and rating scales) and open-ended questions.

Although participation was voluntary, participants were asked to provide their names and institutional affiliations for potential follow-up or clarification. All responses were kept strictly confidential, and no identifying information was disclosed in the presentation or publication of the findings. The third stage involved data analysis. The data were analyzed using SPSS Statistics version 24.0. Descriptive statistics summarized the characteristics of participating institutions and their responses to key factors. Categorical data were reported as frequencies and percentages. For open-ended questions, the authors conducted a content analysis by thoroughly reading the responses, then extracting themes and important information. This study employed a survey and descriptive design without hypothesis testing; therefore, a significance level of p < 0.05 was not applicable. The study received ethical clearance and approval from the Institutional Review Board of the Faculty of Health Sciences, Universitas 'Aisyiyah Yogyakarta, Indonesia (No: 2192/KEP-UNISA/VII/2022). Informed consent was obtained from each participant to ensure their voluntary participation and awareness of the study's purpose and procedures.

Results

As of 2023, AIPNEMA had 42 registered institutions with 71 nursing programs, ranging from undergraduate to postgraduate levels. Among these, 70 nursing programs responded to our questionnaire. Cupping was taught in 30 (42.86%) of the 70 nursing programs, predominantly in high-profile schools accredited as Good to Superior by the Indonesian Accreditation Agency for Higher Education in Health. This included three master's programs. Notably, one institution integrated cupping into all educational levels: diploma, bachelor's, and master's degrees (Figure 2). The most common reasons for incorporating cupping into the curriculum were preserving local wisdom (n=20), addressing public

needs (n=14), and equipping graduates with additional competencies (n=14). Some institutions also taught cupping to align with student interests (n=5) or as a recruitment draw for prospective students (n=4). Across almost all programs, learning objectives focused on enhancing students' attitudes, knowledge, and skills (Table 1). Cupping course was generally incorporated in broader subject rather than an individual (distinct) one. Cupping was mainly integrated in Holistic and Complementary Nursing (Figure 3). Most of the subjects in which cupping therapy incorporated were organized as mandatory subject (n= 19). Of 5 programs who offered cupping therapy as individual subject, more than 50% (n=3) also organized it as mandatory. Across all institutions, the course allocation did not exceed 2 credit hours per week (Semester Credit Hour) (Figure 4).

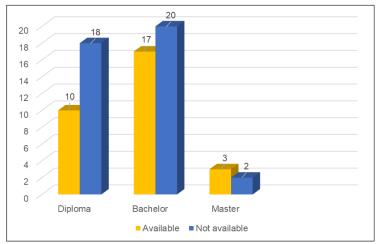


Figure 2. Availability of cupping topic.

Various teaching methods were employed to deliver cupping, with lectures and tutorials being the most common, followed by methods such as training in problems-based learning, seminars, small group discussion, cupping clinics, hands-on practice, and peer-to-peer cupping practice (Figure 5). The most frequently covered cupping subtopics included definition and classification, standard operational procedures, and the history of cupping (Figure 6). The most common assessment methods for the cupping subject were Multiple Choice Questions (MCQs) and attendance tracking, used by 24 (80%) and 22 (73%) programs, respectively. Program evaluation typically involved a combination of student performance, student feedback, staff feedback, and examiner reports, including both internal and external assessments (Table 2). The curriculum for cupping was typically communicated through conventional approaches such as workshops, tutorials, overviews, and official materials. Curriculum preparation was predominantly managed by the teaching teams and course committees in almost all programs (n=28).

Table 1. Reasons for incorporating cupping.

Reasons	Frequency (n)	Percentage (%)
To preserve local wisdom	20	67 %
To advance graduates with additional competency	14	47%
To meet public needs	14	47%
To match vision and mission of program	7	23%
Decision from upper authority	5	17%
To meet the students' interest	5	17%
To attract prospective students'	4	13%
To support cupping research	3	10%
To follow national policy	2	7%

Table 2. Assessment and evaluation.

Assessment for students	Frequency (n)	Percentage (%)
MCQs	24	80%
Attendance tracking	22	73%
Direct observation of procedural skill	12	40%
Essay	11	37%
Written assignment	8	27%
Objective structured clinical examination	7	23%
Logbook	3	10%
The mini-clinical evaluation exercise	2	7%
Peer evaluation	2	7%
Assignment and soft skills	1	3%
Evaluation of the program		
Students' result	28	93%
Students' feedback	23	77%
Examiners' report	8	27%
Staffs' feedback	7	23%
External examiners' report	1	3%

Discussion

The study documented that a significant number of participants reported that cupping therapy was not included in the curricula of the nursing programs. However, many of these participants did not provide a specific reason for this omission, which is a key limitation of the current research. The most common general reasons for not including cupping topics in 40 institutions (57.14%) were insufficient human resources and misalignment with the institutions' vision. This included six programs that had previously offered cupping in earlier academic years. The shortage of academic nurses

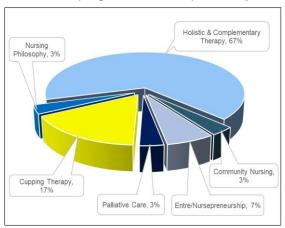


Figure 3. Subject of cupping course.

and nursing faculty is a complex issue that often attributed to demanding academic requirements, less competitive benefits compared to clinical or private-sector roles, and an aging workforce nearing retirement (American Association of Colleges of Nursing, 2024). Though the specific reasons for this shortage among our participants have yet to be determined, a practical approach to addressing insufficient human resources is to implement faculty development programs. Specifically, training initiatives focused on TCAI or cupping competencies that could help expand the expertise of the existing faculty and better prepare them to educate students on a broader range of therapeutic modalities. Thus, a comprehensive understanding of this issue requires a deeper investigation into the underlying factors that strengthen nursing education. One potential explanation is that the inclusion of cupping therapy may not suitable with the core vision and educational philosophy of every nursing

institution. To definitively address this, a future study would need to analyze the curricula and stated visions of various nursing programs. Such a study could then determine if there is a disconnect between the established educational goals and the incorporation of TCAI like cupping.

A nursing school evaluated that cupping therapy was not part of the core curriculum because it is not mandated by the Association of Indonesian Nurse Education Centers (AIPNI). This response aligns directly with the curriculum published by AIPNI in 2021. The condition raised a discussion, as cupping therapy recommended in the Standar Intervensi Keperawatan Indonesia (SIKI) — the Indonesian Nursing Intervention Standard — published by the Indonesian National Nurses Association (Persatuan Perawat Nasional Indonesia, 2018). This suggests that nursing schools should consider incorporating cupping therapy into their curricula to align with the official standards for nursing interventions. Our study recommended stakeholders in higher nurse education work intensively to provide nurses with optimum

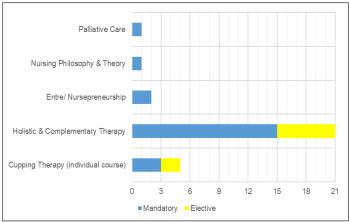


Figure 4. Cupping course organization.

guidance, both in academic and practical settings. AIPNEMA should promote synergy, excellence and equality among its institutions. The organization can encourage its member for collaboration in research and curriculum development, especially in regard to TCAI curricula. A national effort may be necessary to promote updates and alignment with current standards. Educational health institutions are essential in incorporating cupping therapy into nursing education by formulating pertinent curricula, undertaking evidence-based research, and providing a training via academic and clinical platforms. Also, improving institutional support is important to synchronize nursing education with comprehensive healthcare practices. To our knowledge, no previous study has investigated TCAI curriculum implementation in Indonesian academic institutions. Therefore, the study serves as solid groundwork for further research on the structural education of cupping with several reasons. Firstly, the diverse course titles that ranging from entrepreneurship to palliative care demonstrate that nursing programs have opportunities to integrate cupping and other TCAI. Secondly, the similar educational content across nursing programs suggests that further research to standardize this content is feasible and beneficial for developing curricula and competency for nurses.

The study highlighted that local wisdom and public needs were substantial in determining curriculum development in nursing programs. A study supported that defining the context in which a program operates (or will operate) is a crucial initial step in curriculum development to ensure the program's relevance to the community needs (Deboor, 2020). Some

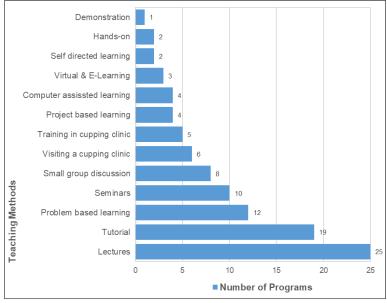


Figure 5. Teaching methods.

of our participants taught cupping with the intention of graduating students with additional competencies that would benefit their professional careers. However, future studies exploring the integration of cupping into nursing curricula based on Indonesia's local wisdom would be particularly interesting. A previous study from other country strengthens the idea that specialized courses for specific nursing specialties should be based on population health needs (Schwendimann et al., 2019). In addition, cupping was also fully integrated into non-traditional courses like entrepreneurship/nursepreneurship at several Universities in Indonesia, including Universitas Muhammadiyah Kendal Batang and Universitas Muhammadiyah Banjarmasin. This implementation can help expand widely job opportunities for healthcare professionals including nurses, especially in the course of palliative care and complementary therapy in daily practice (Copelli et

al., 2019). Therefore, nursing students need adequate knowledge and skills in TCAI therapies to improve their readiness for a professional career.

Cupping has been intensively discussed in the Indonesian health system due to its widespread practice among the population (Risniati et al., 2020). However, this practice is often carried out by nontrained or non-formally trained practitioners that raising concerns about safety measures and standardization. Thus, healthcare professionals are expected to incorporate TCAI into their practice in a safe and effective manner. In our findings, most nursing programs deliver practical cupping skills with standard operating procedures, proposing that nursing graduates will be equipped to incorporate

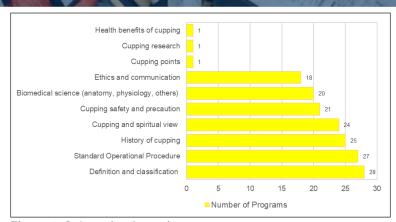


Figure 6. Sub-topic of cupping.

cupping into patient care. A study from Europe supported that integrative nursing education should include national regulatory frameworks and self-care competencies as key learning outcomes (Lunde et al., 2023). Some nursing programs organized visits and training to their associated cupping clinic. Inter-professional education (IPE) in TCAI medicine has been introduced as a key for addressing upcoming healthcare challenges from research conducted in Germany and Switzerland (Homberg & Stock-Schröer, 2021). These proposed teaching methods might not be an ideal IPE approach compared to clinical rotation, a highly recommended IPE activity. However, its feasibility is limited in Indonesia due to the limited of hospitals practicing TCAI services. Visiting and training in cupping clinic allows nursing students to collaborate with peers from diverse backgrounds and improve learning experience. Future collaboration of stakeholders is essential to strengthen the system of TCAI practice (von Schoen-Angerer et al., 2023).

Our findings revealed that cupping therapy was organized within a broader subject which is similar to a study in Spain (Gutiérrez-Sánchez et al., 2024). However, our study found that cupping was offered as a mandatory course, which is contrary to the elective format observed in the Spanish study. It is unfortunate that cupping therapy was not explicitly mentioned as a TCAI. A study from Europe recommended that integrative nursing education should include national regulatory frameworks and self-care competencies as key learning outcomes (Lunde et al., 2023). Unfortunately, none of our participants acknowledged these points. This highlights a critical need for nursing faculties to convey national TCAI regulations to students, as this knowledge would be beneficial for their careers. Although this study has strengths in terms of educational development, there are several limitations in the research process. It is worth noting that a major limitation is the small number of participant scope. A nationwide survey was not possible given the absence of prior information and insufficient resources. Cupping is likely the most prevalent modality among others (such as herbal therapy, hypnotherapy, acupressure and acupuncture). Yet, we observed that only a limited number of nursing programs currently teach it. The study recommends that nursing programs may consider including cupping therapy in their curricula, graduating nurses with excellent attitude, skill and practices. This study focused on Muhammadiyah-affiliated nursing programs due to their strong ties to local and religious values. The connection corresponds with the anticipated outcome that cupping therapy would be integrated into their curriculum.

Conclusion

TCAI particularly cupping therapy are indeed integrated into nurse education in Indonesia. Although there are variations in curriculum implementation both within and among these programs, thirty nursing programs that ranging from diploma to master's degrees offer cupping therapy subject. Entrepreneurship is a promising way to teach TCAI topics that giving nursing students extra skills to help them deal with rising unemployment in their field. In practice, nurses need sound knowledge, a positive attitude, and transcultural skills regarding TCAI therapies to meet the diverse culture and beliefs. In the future studies, collaboration among nurse educators is fundamental to enhancing structural education, as it allows for the validation of standards and the improvement of the curriculum. Future studies should also explore pedagogical approaches, student satisfaction, anticipated changes, learning outcomes, curriculum improvement, and the barriers and support systems for effective curriculum implementation. Additionally, qualitative research could provide in-depth insights into the development and implementation of curricula. Notwithstanding its advantages and disadvantages, the study presents important contributions that can aid in the advancement of other programs with comparable interests in TCAI therapies particularly cupping.

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Al statements

The entire writing process did not utilize generative-text artificial intelligence. All ideas and concepts were originally developed by the listed authors.

Author's declaration

Each author contributed to all phases of the research and preparation of the publication.

Availability of data and materials

The datasets are available from the corresponding author upon request.

Competing interests

The authors declare no competing interest.

Ethical clearance

Ethical clearance was obtained from the Faculty of Health Sciences, Universitas 'Aisyiyah, Yogyakarta, Indonesia (No: 2192/KEP-UNISA/VII/2022).

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Publishers and journal's note

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Authors' insight

Key points

- The article presented a detail how cupping therapy is integrated into the curriculum of nursing higher education institutions in Indonesia.
- The finding highlight that the competencies nursing students are expected to gain regarding cupping therapy, such as proper technique, indications, contraindications, safety protocols, and patient education.
- The study explained the regulatory framework surrounding cupping therapy and acceptance of this practice within the Indonesian healthcare system and society.

Emerging nursing avenues

- What are the specific learning outcomes and assessment methods used to evaluate nursing students' proficiency in cupping therapy within Indonesian higher education programs?
- What challenges do nursing educators face in teaching cupping therapy considering potential variations in traditional practices within Indonesian academic settings?
- How does the curriculum for cupping therapy prepare graduates to effectively integrate with conventional Western medical practices?

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