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From Cultural Continuity to Accountable Care: A Co-Developed Nine-Component Best-Practice Spiral Model for Traditional Healing in Ghana

A participatory ethnographic qualitative study

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Abstract

Background: Traditional healing remains an important and culturally grounded source of care in many Ghanaian communities, yet efforts to improve practice often separate patient safety from indigenous knowledge, artistic heritage, and community authority. This study examined how a culturally appropriate best-practice guide could be co-developed with Sissala knowledge holders in Ghana. **Methods**: An interpretive qualitative design combined ethnographic and phenomenological approaches. The wider study involved 25 purposively and snowball-sampled participants from Lambussie District, Sissala West District, and Sissala East Municipality: 12 traditional medicine practitioners, five patients, five elderly residents, and three indigenous visual artists. Data were generated through semi-structured interviews, repeated engagements with healers, observation, informal discussion, field notes, audio recordings, and photographic documentation. Objective Four comprised 10 specifically coded co-development responses integrated with member checking and the wider thematic findings. Reflexive thematic and narrative analyses were supported by NVivo. **Results**: Six themes informed the guide: preservation of indigenous healing knowledge; ethical practice and professional conduct; patient safety and quality assurance; holistic and patient-centered care; preservation of artistic and cultural heritage; and collaboration and referral. These themes were translated into nine practice components: patient consultation, condition management, safety and quality assurance, ethical practice, artistic and cultural heritage, knowledge transmission, environmental sustainability, collaboration and referral, and monitoring and continuous improvement. A spiral model represented these components as mutually reinforcing rather than linear. Participants supported preserving beneficial practices while adapting unsafe or unsustainable procedures, strengthening confidentiality, supervising plant collection, monitoring treatment response, and referring cases beyond practitioner competence. **Conclusion**: The co-developed guide offers a culturally grounded framework for accountable traditional healthcare without claiming to establish clinical efficacy or standardized dosage. Its implementation should proceed through practitioner-led piloting, Sissali-language adaptation, biomedical stakeholder validation, explicit referral criteria, and outcome monitoring.

Keywords: traditional healing; co-design; indigenous knowledge; patient safety; cultural heritage; medical pluralism; Sissala; Ghana

1. Introduction

Traditional medicine is not a single set of remedies but a heterogeneous field of knowledge, relationships, therapeutic procedures, and cultural meanings. In Ghana, patients may move among herbalists, diviners, bone setters, traditional birth attendants, pharmacies, clinics, hospitals, and faith-based providers according to how they understand the cause, severity, duration, and social meaning

of illness. This plural health environment helps explain the continuing importance of traditional practitioners, particularly where they are geographically accessible, culturally intelligible, trusted, and responsive to spiritual or psychosocial concerns that patients believe are not fully addressed in conventional services (Kwame, 2021; Ampomah et al., 2023).

The policy challenge is not whether traditional medicine exists, but how its beneficial contributions can be strengthened while preventable harms are reduced. The World Health Organization Global Traditional Medicine Strategy 2025-2034 calls for stronger evidence, appropriate regulation, safe and effective practice, health-system integration where appropriate, and cross-sector collaboration. Its guiding principles include holism, biodiversity, Indigenous rights, cultural respect, people-centered care, community engagement, and health equity (WHO, 2025). These priorities are especially relevant to community-based healing systems whose knowledge is transmitted through oral instruction, apprenticeship, ritual participation, lineage authority, and sustained interaction with local ecologies.

Safety and quality concerns remain substantial. Ghanaian research has identified barriers to the clinical use and integration of herbal medicine, including inconsistent information, limited communication, uncertain dosage, weak referral arrangements, and unequal professional relationships (Ampomah et al., 2021; Asare et al., 2021). Microbiological studies have also demonstrated that contamination can occur when herbal preparations are produced, stored, or distributed under inadequate hygienic conditions (Darkwah et al., 2022; Ahiabor et al., 2024). These concerns should not be used to portray all traditional medicine as inherently unsafe. They instead show the need for context-sensitive guidance developed with practitioners who understand how medicines, objects, spaces, social responsibilities, and cultural restrictions function in practice.

Co-development is critical because externally written guidelines can misrepresent Indigenous knowledge or reduce it to a deficient version of biomedicine. Participatory research in rural Ghana emphasizes local authority, relational ethics, cultural protocols, and sustained engagement (Appiah, 2020). International co-design scholarship similarly shows that cultural grounding, community leadership, inclusive partnership, transparency, reciprocal benefit, and iterative review are necessary if community members are to influence both the process and the outcome rather than merely endorse predetermined recommendations (Butler et al., 2022; Anderson et al., 2022; Cunningham & Mercury, 2023).

The Sissala of the Upper West Region of Ghana provide an important setting for this inquiry. Ethnobotanical evidence from Sissala East Municipality documents extensive medicinal-plant knowledge, but plant inventories alone cannot capture the ethical, artistic, spiritual, relational, and performative dimensions through which treatment is understood and enacted (Dery et al., 2023). The wider dissertation from which this article is derived documented practitioner activities, artistic practices, and cultural beliefs among Sissala communities. Objective Four moved beyond description by asking how a culturally appropriate best-practice guide could be developed with traditional healers and other knowledge holders.

This article therefore reports the co-development process, the six empirical themes that informed the guide, and the resulting nine-component spiral model. The study did not attempt to certify remedies, determine pharmacological efficacy, or impose uniform procedures across different practitioner specializations. Its purpose was to establish shared principles for patient-centered care, ethical responsibility, safer practice, cultural continuity, environmental stewardship, reciprocal referral, and ongoing improvement.

2. Methods

2.1 Study design and orientation

The study used an interpretive qualitative design supported by ethnographic and phenomenological approaches. Ethnography enabled examination of healing activities within their cultural, material, linguistic, and ecological settings, while phenomenological inquiry supported attention to the lived meanings articulated by practitioners, patients, elders, and artists. The fourth objective incorporated a participatory co-development orientation: study findings were not treated only as descriptive data but as material for iterative reflection, member checking, and construction of a practical guide.

The article reports the Objective Four strand of the wider study. Analysis was informed by Indigenous Knowledge Systems, medical pluralism, symbolic-interpretive perspectives, and community-based participatory research. These perspectives directed attention to community authority over knowledge, the cultural meanings of artistic and ritual forms, movement between traditional and biomedical systems, and the need for practitioners to influence the content and use of the guide.

2.2 Study setting

Fieldwork was conducted in selected Sissala communities across Lambussie District, Sissala West District, and Sissala East Municipality in Ghana's Upper West Region. The three areas share linguistic and cultural connections and are characterized by dispersed settlements, savanna ecology, cross-border mobility, agricultural livelihoods, and continued reliance on locally accessible practitioners. Herbal treatment, bone setting, divination, maternal care, snakebite management, spiritual consultation, and craft production remain present across the study area, although practitioner specializations and access to biomedical services differ by community.

2.3 Participants and sampling

The wider study included 25 participants selected through purposive and snowball sampling: 12 traditional medicine practitioners, five patients, five elderly residents, and three indigenous visual artists. Traditional practitioners included herbalists, bone setters, diviners, a traditional birth attendant, and a snakebite healer. Patients contributed experience of consultation, treatment communication, dignity, and follow-up; elders contributed historical, ethical, and cultural perspectives; and artists described the production and meanings of pottery, carvings, woven materials, musical objects, and other healing-related forms.

Participants were recruited because they possessed direct experience or specialized knowledge relevant to the research questions. Sampling continued until additional engagements no longer generated substantially new categories or explanations (Saunders, 2018). The Objective Four dataset contained 10 explicitly coded co-development responses distributed across the study areas. These records were interpreted alongside member-checking discussions and the findings from the first three objectives because the guide was intended to translate the study as a whole into practice principles.

Table 1. Participant composition and contribution to the co-development strand

Participant group	n	Principal contribution	Role in guide development
Traditional medicine practitioners	12	Practice knowledge, risks, professional limits, treatment and referral experience	Primary practice partners
Patients	5	Experiences of communication, respect, privacy, follow-up, and treatment choice	Patient-centered perspective
Elderly residents	5	Historical memory, cultural values, ownership, continuity, and community legitimacy	Cultural governance perspective
Indigenous visual artists	3	Production and meanings of healing objects, symbols, and performance forms	Artistic-heritage perspective
Objective Four coded responses	10	Direct co-development statements across the three study areas	Core analytic corpus

2.4 Data generation and co-development process

Community entry followed local authority structures. Permission was sought from traditional leaders in Lambussie, Gwollu, and Tumu, and the purpose of the study was explained before recruitment. Semi-structured interviews were conducted primarily in Sissali and lasted approximately 60 to 90 minutes. Each traditional healer was interviewed on two occasions, usually before and during or after observation, to permit clarification of emerging issues. Interviews were complemented by direct observation, informal conversations, field notes, audio recordings, and photographic documentation where permission was granted.

Co-development was iterative rather than confined to a single workshop. Initial interviews and observations documented existing practices, strengths, tensions, safety concerns, cultural obligations, and referral experiences. Preliminary interpretations were then revisited during follow-up conversations and member checking. Participants clarified cultural expressions, corrected interpretations, identified practices that should be preserved, and proposed areas requiring adaptation. The researchers synthesized these contributions into draft thematic domains and practice components, which were refined against the wider findings. This approach allowed the guide to reflect practice realities without presenting every local variation as a universal rule.

2.5 Data analysis

Audio recordings were repeatedly reviewed, transcribed, and compared with field notes. Sissali expressions were translated into English with attention to indigenous terminology and context; where exact equivalents were unavailable, explanatory translations were used. Data were de-identified through participant coding. Interview transcripts, observation records, analytic memos, and descriptions of visual materials were organized in NVivo.

Analysis combined deductive and inductive coding. Deductive codes reflected the study objectives and theoretical framework, including knowledge transmission, ethics, patient safety, artistic heritage, environmental responsibility, collaboration, and referral. Inductive and in-vivo codes were developed from participants' own expressions. Reflexive thematic analysis followed recursive phases of familiarization, coding, theme construction, theme review, definition, and reporting (Braun & Clarke, 2006, 2021). Narrative analysis preserved the sequence and cultural context of individual accounts. For Objective Four, themes were translated into action-oriented components by asking what practice problem was identified, what culturally acceptable response was proposed, who would be responsible, and how progress could be monitored.

2.6 Trustworthiness and ethics

Credibility was supported through methodological triangulation, repeated engagement, follow-up interviews, member checking, and comparison of participant groups and districts. Dependability was strengthened through retention of interview guides, recordings, field notes, coding records, analytic memos, and revisions to the guide. Reflexive notes were used to distinguish the researcher's cultural familiarity from participants' meanings, while divergent practices were preserved rather than removed to manufacture consensus.

Customary authorization was obtained from relevant traditional authorities, and informed consent was sought before interviews, observation, audio recording, or photography. Participants were informed of their right to withdraw, and sacred, restricted, family-owned, or personally sensitive knowledge was handled cautiously. Because the study involved human beings, ethical considerations were observed in the field of study (Bhandari, 2023). Approval for the study was given by the for Humanities and Social Sciences Research Ethics Committee, KNUST, under the reference number, HuSSREC/AP/401/VOL. 5.

3. Results

3.1 Co-development as preservation with responsible adaptation

Participants did not frame preservation and improvement as opposing objectives. They wanted beneficial knowledge, cultural values, and artistic practices to continue, but they also recognized that changing public expectations, environmental pressures, biomedical expansion, and concerns about hygiene and accountability required adaptation. A bone setter summarized this negotiated position:

> *"Traditional healing is changing. We need ways to preserve what is good while adapting the practice to modern life."* **— Bone setter, Lambussie District**

A herbalist similarly described the guide as necessary for the future of practice because social and health conditions were changing rapidly. The guide therefore emerged as a flexible framework rather than a rigid standardization exercise. It sought to identify shared responsibilities across different practitioner types while preserving legitimate variation in family knowledge, spiritual orientation, specialization, and treatment technique.

3.2 Six themes informing the guide

Six cross-cutting themes were generated from the Objective Four responses and member-checking process. The themes were analytically distinct but closely connected: preserving knowledge required responsible apprenticeship; ethical conduct required recognition of professional limits; patient safety required monitoring and referral; holistic care required respectful communication; cultural preservation required support for artists and languages; and collaboration required mutual respect rather than professional absorption.

Table 2. Empirical themes that informed the best-practice guide

Theme	Participant-derived concern	Practice implication	Guide components
Indigenous knowledge preservation	Lineage-based knowledge may disappear when elders die without trained successors.	Culturally controlled documentation, supervised mentorship, and apprenticeship.	6, 9

Theme	Participant-derived concern	Practice implication	Guide components
Ethical practice and professional conduct	Confidentiality breaches, false claims, exploitation, and refusal to acknowledge treatment limits threaten trust and welfare.	Explicit ethical standards, truthful communication, dignity, consent, and timely referral.	4, 8, 9
Patient safety and quality assurance	Wrong plant identification, contamination, unclear preparation, unsafe storage, and inadequate follow-up can cause harm.	Supervised harvesting, hygienic preparation, labeling, monitoring, and adverse-reaction review.	2, 3, 9
Holistic and patient-centered care	Patients interpret illness through physical, emotional, social, cultural, and spiritual dimensions.	Respectful consultation, careful listening, culturally sensitive assessment, and avoidance of fear or stigma.	1, 2, 4
Artistic and cultural heritage	Healing loses meaning when languages, objects, symbols, performers, and ritual knowledge are detached from practice.	Responsible documentation and support for artists, elders, and youth cultural education.	5, 6
Collaboration and referral	Practitioners support cooperation but prefer reciprocal referral rather than absorption into hospitals.	Defined professional boundaries, emergency referral, consent-based information sharing, and feedback.	8, 9

3.2.1 Preservation of indigenous healing knowledge

Participants identified oral and lineage-based transmission as both a strength and a vulnerability. Restricted family ownership can protect knowledge from misuse, yet it can also result in permanent loss when no successor is prepared. One herbalist explained:

> *"Some of the knowledge belongs to particular families and clans. When nobody in the family learns it, that knowledge may disappear completely."* **— Herbalist, Lambussie District**

An elderly participant linked documentation to collective identity, arguing that younger generations should understand what existed before them. The guide therefore combined observation, mentorship, apprenticeship, oral tradition, community education, and culturally controlled documentation. It did not require public disclosure of sacred formulas or family-owned knowledge.

3.2.2 Ethical practice and professional conduct

Confidentiality, honesty, equal treatment, dignity, and recognition of professional limits were identified as core ethical duties. A female herbalist compared the responsibility of traditional healers with expectations placed on biomedical professionals:

> *"Traditional healers must behave professionally, just as practitioners in the biomedical system are expected to do. Patients trust us with sensitive information, and that trust must always be respected."* **— Female herbalist, Lambussie District**

A diviner emphasized that no practitioner should claim competence over every illness. Continuing ineffective treatment was viewed as a threat to the patient because it could delay access to another healer or a biomedical facility. The ethical component therefore prohibited false claims, exploitation, unnecessary delay, deliberate discouragement of referral, and unauthorized disclosure of patient information.

3.2.3 Patient safety and quality assurance

Correct plant identification, supervised harvesting, clean water, hygienic tools, suitable containers, safe storage, clear labeling, appropriate administration, patient monitoring, and referral of complications were recurring safety priorities. A herbalist warned that improperly supervised collectors could harvest the wrong roots:

> *"Medicine can help people, but when it is not prepared correctly, it can also create problems. Some healers send young boys to collect roots without proper supervision, and they may dig up the wrong root."* **— Herbalist, Sissala West District**

This concern linked apprenticeship directly to patient safety. The guide required knowledgeable supervision during plant collection and medicine preparation, orderly and private treatment environments, monitoring of treatment response, and documentation of suspected adverse reactions. It did not establish standardized pharmacological doses because the study did not clinically test remedies.

3.2.4 Holistic and patient-centered care

Participants described healing as broader than symptom removal. Consultation could involve physical symptoms, previous treatment, family circumstances, emotional distress, cultural concerns, and spiritual interpretations where relevant. A diviner explained:

> *"Healing is not only about removing the sickness. It is also about restoring balance in the person's life, which is why we may attend to the spiritual side of the condition."* **— Diviner, Sissala East Municipality**

The guide translated this worldview into respectful reception, careful listening, privacy, trust building, clear communication, informed participation, and follow-up. It also required practitioners to avoid using spiritual explanations in ways that create fear, stigma, or delay urgent physical assessment.

3.2.5 Artistic and cultural heritage preservation

Participants regarded healing-related pottery, calabashes, carved objects, woven materials, music, symbols, oral forms, and ritual performance as functional parts of practice rather than decoration. An elder cautioned that the loss of cultural values would also erode healing knowledge:

> *"When cultural values disappear, healing practices also lose their meaning. The disappearance of ancestral practices will also lead to the disappearance of traditional healing knowledge because the two cannot be separated."* **— Elderly resident**

The guide therefore recognized the roles of potters, carvers, blacksmiths, weavers, musicians, performers, elders, and youth. Documentation was recommended where culturally authorized, but the guide also required that artistic or ritual practices should not endanger patients or override consent and dignity.

3.2.6 Collaboration and referral

The majority of consulted practitioners supported communication and reciprocal referral between traditional and biomedical providers. They did not favor the complete absorption of traditional healing into hospital structures. A bone setter described existing informal cooperation in fracture care:

> *"We are all trying to help patients, so there should be ways for us to work together. Sometimes biomedical practitioners even call me to assist with certain fracture cases."*
> **— Bone setter, Sissala East Municipality**

The guide emphasized immediate referral for conditions beyond practitioner competence, including severe fractures, maternal emergencies, complicated snakebites, persistent illness, suspected serious infection, adverse treatment reactions, and other emergencies. Because biomedical practitioners were not part of the original sample, these referral provisions remain practitioner-informed proposals requiring formal interprofessional validation.

3.3 The nine-component best-practice guide

The six themes were operationalized into nine interconnected components. The first five focus on care delivery, safety, ethics, and cultural heritage; the remaining four address continuity, sustainability, referral, and improvement. The components are intentionally broad enough to apply across different practitioner categories while retaining measurable responsibilities.

Table 3A. Co-developed guide: patient care, treatment, safety, ethics, and cultural heritage

Component	Main focus	Recommended practices	Responsible actors	Monitoring indicators
1. Patient consultation	Respectful, holistic, culturally appropriate assessment	Welcome patients respectfully; provide privacy; establish trust; assess symptoms, duration, severity, prior treatment, social circumstances, and cultural or spiritual concerns where appropriate; document follow-up.	Healers, patients, caregivers	Consultation records; patient feedback; completeness of assessment
2. Management of selected conditions	Safe and appropriate care for herbal conditions, fractures, snakebites, reproductive and maternal concerns, and spiritually interpreted illnesses	Identify medicinal plants correctly; use appropriate preparation; assess injuries; immobilize fractures; reassure snakebite patients; encourage antenatal care; counsel respectfully; refer complications and emergencies.	Specialist healers, caregivers, biomedical providers	Treatment outcomes; complications; referral records; follow-up results

Component	Main focus	Recommended practices	Responsible actors	Monitoring indicators
3. Safety and quality assurance	Prevention of contamination, preparation errors, unsafe administration, and poor treatment conditions	Use clean water and tools; protect remedies from contamination; store and label medicines; maintain a clean, private treatment space; monitor progress and suspected adverse reactions.	Healers, apprentices, caregivers, regulators	Cleanliness; labeling and storage; adverse reactions; follow-up frequency
4. Ethical code of practice	Dignity, confidentiality, honesty, accountability, and professional limits	Treat patients equally; maintain confidentiality; provide truthful information; avoid false claims and exploitation; protect vulnerable patients; involve patients; recognize limits; refer when necessary.	All healers, associations, community leaders	Complaints; confidentiality breaches; inappropriate claims; documented referrals
5. Artistic and cultural heritage	Protection of healing-related objects, symbols, performance, and cultural meanings	Use locally produced artifacts responsibly; preserve and document authorized traditions; support artists; involve youth; protect culturally restricted knowledge and patient dignity.	Healers, artists, elders, cultural institutions, youth	Documented practices; artist participation; youth involvement; preservation activities

Table 3B. Co-developed guide: knowledge transmission, sustainability, referral, and improvement

Component	Main focus	Recommended practices	Responsible actors	Monitoring indicators
6. Knowledge transmission and apprenticeship	Responsible preservation and transfer of healing knowledge	Use observation, mentorship, and apprenticeship, oral tradition, and community education; teach plant identification, preparation, treatment procedures, ethics, culture, patient care, and safety.	Experienced healers, family custodians, elders, apprentices, associations	Active apprentices; mentorship records; competency review; preservation records
7. Environmental sustainability	Conservation of medicinal resources and biodiversity	Cultivate plants where feasible; protect endangered species; avoid destructive harvesting; replant; use roots, bark, leaves, and animal materials responsibly; educate apprentices.	Healers, farmers, forestry and environmental actors, community leaders	Plants cultivated; harvesting practices; species protected; conservation actions
8. Collaboration and referral	Cooperation between traditional and biomedical providers	Create referral pathways; transfer emergencies and complicated cases; communicate respectfully; recognize professional limits; share essential information with patient consent; seek feedback.	Healers, hospitals, clinics, health authorities, patients	Referrals made and received; outcomes; emergency transfer time; documented collaboration
9. Monitoring and continuous improvement	Regular review of care quality, safety, ethics, knowledge continuity, and patient experience	Assess satisfaction and outcomes; review adverse reactions, ethical conduct, apprenticeships, referrals, and conservation; hold periodic practitioner and community review meetings; revise practice when needed.	Healers, patients, elders, associations, biomedical providers, researchers, regulators	Patient feedback; outcome records; adverse-event records; review meetings; improvements introduced

3.4 The nine-component spiral model

The guide was represented as a spiral to emphasize recurrence, interdependence, and adaptation. It is not a linear treatment algorithm. Patient consultation and condition management initiate care, but their quality depends on ethics, safety, cultural meaning, knowledgeable practitioners, viable ecosystems, referral relationships, and review of outcomes. Continuous improvement occupies the visual center because each component must be revisited as patient needs, evidence, resources, and cultural conditions change. The model is therefore patient-centered in purpose and improvement-centered in its operating logic.



Figure 1. Co-developed nine-component spiral model for patient care, treatment, safety, ethics, cultural heritage, knowledge transmission, environmental sustainability, referral, and continuous improvement.

3.5 Outcome of the co-development process

The process produced a negotiated framework that combined cultural continuity with contemporary expectations of safety, documentation, accountability, environmental responsibility, and patient-centered care. Participants did not support an unrestricted preservation of every inherited procedure, nor did they support replacing Sissala healing with a biomedical template. They supported retaining valuable knowledge while reviewing practices that could cause contamination, delay referral, exploit patients, deplete medicinal resources, or weaken public trust. The guide's outcome was therefore conceptual and practical rather than clinical. It identified what responsible practice should attend to, who should participate, and what indicators could support local monitoring. It did not verify the efficacy of individual remedies, establish universal dosage standards, or demonstrate improved patient outcomes. Those questions require pharmacological, toxicological, clinical, implementation, and health-services research beyond the scope of this qualitative study.

4. Discussion

4.1 Principal contribution

The principal contribution of this study is a culturally grounded practice framework developed from the perspectives of Sissala healers and associated knowledge holders. The guide extends beyond technical medicine preparation by integrating ethical responsibility, patient experience, artistic heritage, environmental stewardship, knowledge governance, referral, and continuous improvement. This breadth reflects the reality that traditional healthcare is produced through relationships among practitioners, patients, families, elders, artists, communities, landscapes, and other health providers.

The framework also demonstrates that cultural preservation and patient protection need not be treated as mutually exclusive. Participants supported preserving beneficial practices and identities while adapting procedures that create avoidable risk. This balanced position is consistent with participatory research in rural Ghana, which emphasizes culturally legitimate decision making and relational ethics (Appiah, 2020), and with co-design literature showing that community leadership and iterative review produce more relevant and acceptable health interventions (Butler et al., 2022; Anderson et al., 2022).

4.2 Co-development and community authority

The inclusion of healers, patients, elders, and artists broadened the knowledge base from which practice standards were defined. Healers contributed experiential and specialist knowledge; patients contributed concerns about privacy, communication, and follow-up; elders connected healing with historical memory and cultural legitimacy; and artists explained the objects and performances through which therapeutic meanings are materialized. This participatory structure resists the assumption that a healer alone represents the entire healing system.

The process nevertheless remained researcher-facilitated and should not be overstated as full community governance. The study documents iterative interviews, observation, follow-up, and member checking, but not a separately constituted community steering committee or formal consensus conference. Future implementation should strengthen shared governance by establishing a Sissala-led oversight group with authority over translation, restricted knowledge, revisions, dissemination, and benefit sharing. Cunningham and Mercury (2023) argue that Indigenous co-production requires meaningful authority over priorities, interpretation, and future use; the next phase of this guide should move further in that direction.

4.3 Patient safety, ethics, and professional limits

The guide's safety provisions respond to risks identified by participants themselves: incorrect plant collection, contamination, poor storage, inadequate supervision, unclear administration, and delayed referral. This is important because safety was not introduced solely as an external biomedical concern. Practitioners recognized that medicine can harm when incorrectly identified or prepared. Their recommendations align with evidence of microbial contamination in herbal products in Ghana and across Africa, while providing culturally feasible points of action such as cleaner water, protected containers, trained apprentices, and follow-up (Darkwah et al., 2022; Ahiabor et al., 2024).

Ethical practice was similarly grounded in existing cultural expectations of honesty, trust, restraint, and responsibility. Formalizing confidentiality, equal treatment, truthful communication, and recognition of professional limits can strengthen these values without implying that ethics originates only in biomedical institutions. The referral requirement is particularly significant: it reframes competence as the ability to recognize one's boundaries rather than the ability to claim authority over every condition. This principle is compatible with patient safety and medical pluralism because it allows different systems to remain distinct while coordinating when the patient's needs exceed one practitioner's capacity.

The guide should not be interpreted as evidence that the listed treatments are safe or effective. Clinical effectiveness, herb-drug interactions, pediatric and pregnancy dosing, toxicity, and infection risks require dedicated evaluation. The model instead establishes an ethical and organizational foundation on which such evaluation can be conducted with practitioner participation.

4.4 Knowledge transmission, artistic heritage, and environmental sustainability

The findings extend knowledge-preservation debates beyond medicinal-plant inventories. What is at risk includes plant identification, diagnostic judgment, treatment sequences, moral obligations, oral expressions, ritual restrictions, crafted objects, performance practices, and criteria used by communities to evaluate healing. Written documentation is necessary but insufficient because substantial knowledge is embodied and learned through observation and supervised participation. The guide therefore combines documentation with apprenticeship and mentorship.

Cultural governance is essential. Families, clans, and practitioners may hold restricted knowledge that should not be publicly disclosed. Documentation initiatives should distinguish between information needed for patient safety and information whose release would violate ownership, spiritual obligations, or community consent. This approach is consistent with Indigenous-centered frameworks that place self-determination, culture, land, and relationships at the center of health practice (Oré et al., 2025).

The artistic-heritage component is a distinctive contribution. Potters, carvers, blacksmiths, weavers, musicians, and performers sustain the material and performative infrastructure of healing. A guide that preserved remedies but ignored these contributors would fragment the knowledge system it sought to protect. The environmental component similarly recognizes that traditional medicine depends on medicinal plants and other natural resources. Sissala ethnobotanical research confirms the depth of local plant knowledge (Dery et al., 2023); cultivation, selective harvesting, replanting, biodiversity protection, and apprentice education are therefore health-system responsibilities rather than peripheral conservation concerns.

4.5 Collaboration and reciprocal referral

Participants favored reciprocal referral and communication rather than complete institutional absorption. This preference reflects the autonomy and cultural identity of traditional practice as well as concerns about unequal professional power. Ghanaian studies have found that integration is

constrained by governance, training, recognition, mistrust, and unclear roles (Ampomah et al., 2023; Kwame, 2021). A referral model may be more feasible than immediate structural integration because it permits coordinated care while retaining distinct practice settings.

Evidence from collaborative mental-health care in Ghana and Nigeria shows that structured relationships between traditional or faith healers and primary health workers can improve outcomes when roles are defined and cooperation is supported (Gureje et al., 2020). Visual research in Ghana likewise highlights trust, ethical negotiation, communication, and institutional support as foundations of successful healer-health-worker relationships (Kpobi et al., 2024). The Sissala guide translates these lessons into proposed referral pathways for severe fractures, maternal emergencies, complicated snakebites, persistent illness, adverse reactions, and other conditions beyond practitioner competence.

However, biomedical practitioners were not members of the original sample. The referral component therefore represents a practitioner- and community-informed proposal, not an interprofessional agreement. Formal validation should involve hospitals, community health services, nurses, physicians, midwives, pharmacists, ambulance services, traditional healer associations, patients, and regulatory bodies. Referral criteria, documentation, consent, feedback, and emergency contacts must be negotiated before implementation.

4.6 The value of the spiral model

Representing the guide as a spiral rather than a checklist communicates three ideas. First, the components are interdependent: safe treatment depends on competent apprenticeship, ethical conduct, accurate consultation, viable resources, and referral options. Second, practice is recursive: feedback from patients, adverse reactions, environmental change, and new evidence should lead to revision. Third, cultural continuity is dynamic rather than static. The model permits adaptation without requiring Sissala healing to surrender its identity.

The model aligns closely with the WHO strategy's emphasis on evidence, safety, people-centered care, cultural respect, biodiversity, and integrated services (WHO, 2025). Its distinctive contribution is to organize these global priorities through locally generated categories and responsibilities. The framework can therefore serve as a basis for practitioner training, community dialogue, referral design, conservation planning, and implementation research, but it should not be used as a regulatory instrument until culturally governed piloting and validation have occurred.

4.7 Strengths and limitations

A major strength is the integration of multiple knowledge-holder groups and data sources across three Sissala administrative areas. Repeated healer interviews, observation, informal discussion, narrative analysis, thematic analysis, and member checking supported contextual depth. The guide also retained artistic, cultural, ethical, and environmental dimensions that are frequently omitted from technical standards.

Several limitations require careful interpretation. The sample was purposive and relatively small, and Objective Four contained 10 specifically coded responses. The findings are therefore analytically transferable rather than statistically generalizable. Translation from Sissali may have reduced some cultural nuance, while sacred or restricted knowledge was intentionally withheld. Biomedical practitioners and regulatory officials were not included in the original participant sample, so referral and integration provisions lack interprofessional consensus. The guide was not piloted as an intervention and no clinical, safety, cost, adherence, or patient-outcome data were collected. Finally, the term "best practice" refers to a co-developed normative framework; it does not imply that every recommended procedure has been clinically validated.

5. Implications for Policy, Practice, and Research

Implementation should begin with a culturally governed pilot rather than immediate large-scale adoption. A Sissala-led implementation group should include recognized practitioners from different specializations, patients, elders, indigenous artists, women knowledge holders, youth apprentices, biomedical providers, district health authorities, environmental agencies, and traditional leaders. This group should review the language, cultural permissions, referral boundaries, and monitoring indicators before field use.

1. Translate the guide into Sissali and communicate it through visual materials, oral recordings, demonstrations, and practitioner meetings so that literacy does not determine access.
2. Develop a concise danger-sign and referral protocol with biomedical providers, including emergency contacts, patient-consent procedures, minimum referral information, feedback arrangements, and protection of restricted formulas.
3. Pilot simple quality-improvement records covering consultation, medicine identification and preparation, follow-up, adverse reactions, referrals, patient feedback, apprenticeships, and conservation activities.
4. Create culturally controlled documentation rules that distinguish public knowledge, safety-critical information, family-owned knowledge, and sacred or restricted material.
5. Partner with pharmacologists, toxicologists, botanists, microbiologists, and practitioners to evaluate commonly used remedies, dosage practices, contamination risks, herb-drug interactions, and vulnerable patient groups.
6. Establish medicinal-plant gardens, selective-harvesting guidance, replanting activities, and biodiversity monitoring as part of practitioner and apprentice development.
7. Evaluate feasibility, acceptability, fidelity, cultural safety, referral timeliness, patient experience, adverse events, and practitioner learning before describing the guide as effective.

6. Conclusion

The study demonstrates that Sissala knowledge holders can define practice standards that protect cultural integrity while addressing patient safety, ethics, environmental responsibility, and referral. Six participant-derived themes were translated into a nine-component spiral model that connects consultation and condition management with quality assurance, ethical conduct, artistic heritage, knowledge transmission, biodiversity, reciprocal referral, and continuous improvement.

The framework should be understood as a negotiated foundation for responsible practice, not as proof of clinical efficacy or a substitute for regulation, toxicological evaluation, or emergency biomedical care. Its strongest contribution is methodological and practical: it shows how traditional healers, patients, elders, and artists can participate as knowledge partners in defining culturally meaningful standards. The next stage should be Sissala-led piloting, interprofessional validation, Sissali-language adaptation, and rigorous evaluation of implementation and patient outcomes.

Declarations

Ethics approval and consent to participate

Customary authorization was obtained from traditional authorities in the study areas. Participants gave informed consent before interviews, observations, audio recording, or photography and were informed of their right to withdraw. Approval for the study was given by the for Humanities and Social Sciences Research Ethics Committee, KNUST, under the reference number, HuSSREC/AP/401/VOL. 5.

Consent for publication

Only anonymized participant descriptions and quotations are used in this article. Any identifiable photographs or cultural materials would require separate permission before publication.

Availability of data and materials

The underlying qualitative data include culturally sensitive and potentially restricted knowledge and are not publicly deposited. Requests should be directed to the corresponding author and would require consideration of participant consent, family or clan ownership, and community authorization.

Competing interests

The authors declare that they have no competing interests.

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Author contributions

The first author conceptualized the study, developed the research design and methodology, conducted the fieldwork, collected and analyzed the data, interpreted the findings, and drafted the manuscript. The second, third, and fourth authors provided academic supervision, scholarly guidance and critical intellectual input throughout the research process. They also reviewed and critically revised the manuscript, contributing to its theoretical, methodological and academic refinement.

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Appendix A. Pilot Implementation Checklist

This checklist is intended for piloting and local review. It is not a clinical certification instrument. Each item should be assessed through practitioner self-review, patient feedback, observation, and community discussion.

Domain	Minimum pilot evidence	Met	Needs action
Patient consultation	Private reception; respectful communication; assessment of symptoms, prior treatment, social context, and relevant cultural concerns; follow-up plan recorded.	☐	☐
Condition management	Practitioner works within specialization; treatment steps explained; complications and emergency signs recognized; referral initiated when required.	☐	☐
Safety and quality assurance	Correct materials identified; clean water and tools used; containers labeled and protected; patient response and suspected adverse reactions reviewed.	☐	☐
Ethical practice	Confidentiality maintained; truthful claims made; patient dignity protected; exploitation avoided; consent and cooperation obtained.	☐	☐
Artistic and cultural heritage	Artifacts and performances used responsibly; cultural ownership respected; authorized practices documented; artists and youth included.	☐	☐
Knowledge transmission	Apprentices supervised in plant identification, preparation, patient care, ethics, culture, and safety; competence reviewed before independent practice.	☐	☐
Environmental sustainability	Medicinal resources harvested selectively; endangered species protected; replanting or cultivation undertaken; apprentices taught conservation.	☐	☐
Collaboration and referral	Referral contacts available; minimum patient information shared with consent; emergency transfer is prompt; feedback is sought where feasible.	☐	☐
Monitoring and improvement	Patient feedback, outcomes, adverse reactions, referrals, ethical concerns, apprenticeships, and conservation actions reviewed periodically; changes documented.	☐	☐