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Indigenous healing and the making of medical knowledge in Colonial Java

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Abstract. This article examines how indigenous healing in colonial Java became a site of epistemic negotiation, shaped by the asymmetrical power of colonialism. Rather than offering a descriptive account of *dukun* and *jamu*, the study analyses how colonial physicians and botanists represented, classified, and selectively incorporated local practices into emerging medical categories. The article addresses a key gap in existing scholarship by examining how indigenous medical expertise was reframed through colonial epistemologies, rather than documented from local perspectives. Using a qualitative historical approach, the study treats colonial medical and botanical publications as situated archives shaped by interpretive bias and uneven authority. This analytical lens reveals how dukun were positioned simultaneously as sources of empirical material and as objects of marginalizing discourse, and how *jamu* was redefined from a holistic socio-cosmological practice into a regulated category of "native remedies." The article argues that indigenous healing persisted under colonial rule and became embedded, often in subtle ways, in the formation of hybrid medical knowledge in the Indies. This focus on epistemic negotiation contributes to debates on colonial science and epistemic mediation and offers an approach for reconstructing indigenous epistemologies from within uneven archives.

Key words: Colonial Java, *Dukun*, *Jamu*, Indigenous Healing, Medical Knowledge

Introduction

In the *Encyclopaedie van Nederlandsch-Indië*, a colonial-era encyclopedia produced under Dutch administration, descriptions of belief systems and healing practices in the Indonesian Archipelago reveal not simply ethnographic interest but the representational logics through which colonial authors classified and interpreted indigenous knowledge (1,2). Such accounts are significant because they reveal how colonial epistemologies influenced what was recorded, how it was categorised, and which aspects of local medical expertise were highlighted or suppressed. This study extends the insight by approaching indigenous healing as a site of epistemic negotiation rather than a cultural object for simple description within colonial knowledge-making.

Although healing practices were widespread across the Indonesian Archipelago, this study focuses on Java because colonial observers frequently treated Javanese cosmology, ritual practice, and herbal knowledge as representative models of 'native medicine'. During the colonial period, *dukun* and *jamu* became central objects of classification, regulation, and reinterpretation, and the resulting texts are crucial not as neutral descriptions but as instruments that reveal how colonial scientific authority sought to discipline, domesticate, and appropriate local medical expertise.

This study addresses a major gap in existing scholarship. Historians such as Hans Pols (3) and Liesbeth Hesselink (4) have demonstrated that colonial physicians relied on indigenous expertise, the mechanisms through which colonial texts reframed, constrained, or selectively incorporated Javanese healing have not been systematically examined**.** Existing studies describe ambivalent colonial attitudes toward *dukun* and *jamu*, but they offer limited analysis of how such ambivalence emerged from representational practices shaped by colonial epistemology. By treating colonial medical and botanical publications as situated archives shaped by interpretive bias, hierarchy, and uneven authority, this study offers a critical approach for reconstructing how knowledge about *dukun* and *jamu* was produced, contested, and transformed (2,5).

The main problem examined in this study concerns the ways in which colonial medical and botanical texts relied on Javanese healers for empirical knowledge while simultaneously reframing their practices through classificatory schemes that marginalized local epistemologies. To address this problem, the study is guided by one overarching research question: how did colonial authors represent, reclassify, and selectively incorporate Javanese healing practices—particularly those of the *dukun* and the traditions surrounding *jamu*—into emerging medical categories?

The aim of the study is to analyse the processes through which colonial knowledge production reconfigured Javanese healing, producing hybrid medical categories that obscured or reshaped local understandings of vitality, the body, and cosmological balance. The study also contributes to wider discussions on colonial science, epistemic mediation, and the methodological challenges of reconstructing indigenous knowledge from uneven archives. Research from other Indonesian regions demonstrates comparable links between botanical knowledge, ritual authority, and embodied skill in local healing traditions. The Simalungun *Tambar ni Hulit* manuscript, for instance, outlines classificatory schemes, gendered work, and inherited techniques that structure therapeutic reasoning through relational understandings of illness. These parallels position the Javanese materials within a wider archipelagic landscape and demonstrate that the dynamics analyzed in this article reflect broader patterns in Indigenous medical thought across Indonesia (6).

Method

This study employs a qualitative historical approach grounded in critical textual analysis of colonial-era medical and botanical publications, including works by W.G. Boorsma (5, 7, 8), K. Heyne (9), J. Kloppenburg-Versteegh (10–12), and L. Th. Maijer (13). These sources are treated not as neutral descriptions of indigenous practice, but as "situated archives" shaped by classificatory logics, silences, and the asymmetrical authority of colonial knowledge-making. Drawing on Ann Stoler's (14) method of reading "along and against the grain," this analysis examines how traditional healers, herbal medicine, and Javanese local knowledge are represented in these texts through

classificatory frameworks shaped by the subjective biases of Dutch researchers. In the process, forms of Javanese knowledge deemed 'superstition' were excluded or marginalized; paradoxically, it is precisely this knowledge that has persisted and continues to live within Javanese society.

Colonial publications are also employed because Javanese-written sources—such as medicinal manuscripts—tend to present lists of ingredients, prescriptions, and procedural instructions without detailing the embodied, social, or practical dimensions of healing. Additionally, many dimensions of Javanese healing were transmitted primarily through oral tradition, making colonial writings among the earliest surviving written accounts of these practices—even though they remain shaped by the observational frameworks and epistemic assumptions of their authors. Therefore, these sources provide indispensable, though mediated, evidence for understanding how healing was enacted in everyday settings.

Building on this archival critique, the study incorporates Walter Mignolo's (15) notion of "colonial difference" to analyse how colonial writers translated Javanese healing into categories legible to European science. This interpretive lens highlights how classificatory schemes—such as labels of "native remedies," "superstitious practices," or "empirical plants"—operated as epistemic filters that reorganised local knowledge within hierarchical medical taxonomies. By situating these classifications within broader structures of coloniality, the study foregrounds the epistemic translations that shaped the representation of *dukun* and *jamu*.

The scarcity of indigenous-authored sources shapes the methodological orientation of this study, leading to the application of Linda Tuhiwai Smith's Indigenous-centred methodology (16) through a systematic examination of silences, misreadings, and classificatory language in colonial medical texts. These elements are treated not as analytical limitations, but as empirical data that reveal points of epistemic friction between Dutch scientific frameworks and Javanese ways of knowing. Tracing such distortions and inconsistencies allows the analysis to reconstruct indigenous conceptions of vitality, embodiment, and elements labelled as "superstitious" that were filtered, reshaped, or suppressed in colonial documentation.

The analytical procedure unfolds through a four-stage process that integrates these methodological elements. The study first identifies the classificatory practices used in colonial documents to structure and taxonomise Javanese healing. The second stage traces representational strategies that positioned dukun as empirical informants while framing them within discourses of superstition or disorder. The third stage examines processes of epistemic translation in descriptions of jamu, with particular attention to shifts from relational and cosmological understandings toward simplified biomedical categories.

The final stage reconstructs elements of indigenous epistemology by comparing colonial vocabulary with inferred local logics, particularly in relation to concepts of relational vitality and embodied forms of healing. This structured methodological hierarchy—Stoler providing the archival basis, Mignolo serving as the interpretive perspective, and Smith offering the reconstructive framework—clarifies how the research navigates the tension between reliance on colonial archives and critical engagement with their epistemic authority (14,15). Across these stages, the analysis focuses on how colonial medical texts describe and classify healing practices.

The *Dukun* as healer, ritual specialist, and epistemic mediator

Medical discourse in the late nineteenth and early twentieth centuries in the Dutch East Indies consistently framed a range of conditions as recurrent health concerns among indigenous populations. Proceedings of the first congress of indigenous physicians identified malaria, cholera, smallpox, framboesia, beri-beri, and other nutritional deficiency diseases as endemic diseases that undermined public health and required sustained medical intervention (17). Alongside these large-scale concerns, colonial medical manuals and botanical writings documented the prevalence of everyday ailments—such as digestive disorders, febrile complaints, skin diseases, parasitic infections, postpartum complications, and childhood illnesses—that shaped routine therapeutic practice (9–11). These conditions constituted the medical landscape within which healing was enacted in everyday life.

Within this epidemiological landscape, *dukun* operated as primary healers, drawing on herbal remedies, embodied knowledge, and ritual expertise. While colonial and indigenous physicians increasingly sought to regulate and hierarchise medical authority through vaccination campaigns, prophylaxis, and professional oversight, the persistence of everyday illness ensured that *jamu* and *dukun*-based care remained central to indigenous health practices. Positioning the *dukun* within this epidemiological context clarifies their role not merely as ritual specialists, but as intermediaries between locally grounded therapeutic knowledge and the expanding structures of colonial medical governance.

The figure of the *dukun* thus occupied a central position in Javanese healing, functioning simultaneously as practitioner, ritual mediator, and custodian of vernacular pharmacological knowledge. This multifaceted role made the *dukun* a key site through which colonial physicians, botanists, and administrators sought to observe, classify, and reorganise indigenous medical expertise (3,4). Rather than treating the *dukun* as a timeless cultural figure, this section examines how colonial representations appropriated and reframed their authority within emerging medical, legal, and administrative regimes. At the same time, the *dukun* emerged as a focal point of epistemic tension, as colonial officials regarded them as indispensable informants while simultaneously positioning them as obstacles to the expansion of Western medical rationality. This tension shaped the ways their knowledge was recorded and classified (4).

Although the *dukun* long predated colonial rule, the historical traces of their early roles survive only in fragmentary forms—reliefs, inscriptions, and Old Javanese texts that record rituals, herbal classifications, and cosmological principles (18). These sources do not provide continuous biographies of healers, but they reveal configurations of expertise that linked bodily manipulation, plant-based remedies, and ritual authority across different historical moments (3,4,13,19). Because many dimensions of Javanese healing circulated primarily through oral tradition, textual sources from the precolonial period often describe ingredients and incantations without documenting their practical or interpersonal enactment.

In this context, colonial publications—despite their orientalist framing—constitute some of the earliest surviving written records of how healing practices were carried out in everyday life. When read critically, these texts operate as mediated evidence that captures the material, embodied, and social dimensions of *dukun* practice while simultaneously reframing those practices through Western classificatory logics (3).

Early traces of healing specialists in Java—visible in reliefs, inscriptions, and Old Javanese manuscripts—demonstrate a longstanding presence of actors who combined herbal knowledge, ritual authority, and embodied techniques (18). However, the category "dukun" in colonial writings was not a direct continuation of these precolonial roles, but functioned instead as an administrative label that condensed diverse forms of healing expertise into a single category for purposes of observation and regulation (4,13). This historical shift illustrates how colonial governance reshaped earlier configurations of healing knowledge into forms that were legible within medical and administrative frameworks. As a result, the *dukun* in colonial texts is best understood not simply as a timeless cultural remnant, but as a historically produced figure shaped by both earlier configurations of healing knowledge and the classificatory demands of colonial governance (4).

This colonial label also persisted after independence. In postcolonial Indonesia, the term *dukun* continues to be used by state institutions, the media, and biomedical authorities, often with connotations of superstition or backwardness that echo its colonial construction (20). The endurance of this framing illustrates how colonial epistemologies continue to shape the social meaning and public perception of the *dukun*, thereby helping to explain why their role remains contested within Indonesia's contemporary medical landscape.

When Dutch colonial rule intensified in the nineteenth century, these longstanding healing traditions entered a new field of regulation and epistemic reclassification. Rather than attempting to eliminate indigenous practices, colonial administrators sought to codify and contain them, distinguishing "inlandse geneesmiddelen" (native medicines) from authorized European medicine in statutes such as the 1882 *Staatsblad* No. 97. This framework allowed *dukun* to

continue treating communities. Still, it confined their authority to "native treatment of native diseases," reinforcing a hierarchy in which European biomedicine occupied the normative standard. Colonial physicians, pharmacists, and botanists documented and selectively translated Javanese healing into categories considered legible to Western science (2). Figures such as Kloppenburg-Versteegh compiled detailed inventories of herbs, recipes, and techniques, presenting them through classificatory schemes that reshaped their meaning and positioned them within debates on science, superstition, and the colonial civilising mission (10–12). Through these processes, the *dukun* were recast from diverse local specialists into a regulated and racialised category within the colonial medical order.

Colonial classification not only consolidated diverse healing specialists under the single label *dukun* but also shaped the representational framework through which their practices were documented. Once positioned within this administrative and medical category, *dukun* were described through a grammar that filtered their actions into dichotomies such as empirical versus superstitious, useful versus dangerous, and indigenous versus modern (21,22). This classificatory lens structured what colonial observers considered worth recording—massage techniques, herbal mixtures, ritual gestures—while simultaneously recoding these practices through Western assumptions about rationality, bodily order, and medical efficacy. As a result, colonial accounts reveal less about what *dukun* "were" in an emic sense than about how their authority was interpreted, constrained, and rendered legible in a colonial epistemic regime.

The classificatory regime constructed by colonial medicine shaped both the labeling of the *dukun* and the ways their practices were rendered legible in the colonial archive. Once placed within this category, their actions were interpreted through a representational grammar that separated empirical techniques from elements deemed irrational or spiritually excessive. This perspective shaped what colonial observers recorded and how they evaluated it, placing the *dukun* within a hierarchy of knowledge that privileged European standards of rationality and bodily order.

Within the colonial medical context, the *dukun* remained a prominent and socially embedded healer, but their authority was consistently reframed through the dichotomies of colonial rationality. Colonial writers contrasted the *dukun* with the ethnographic archetype of the shaman—often portrayed as a figure of trance or ecstatic possession—by stressing the *dukun's* engagement with plant-based remedies, bodily manipulation, and everyday therapeutic care (4,13,18). Ritual gestures, offerings, and incantations were interpreted through orientalist assumptions as signs of superstition or backwardness. This dual framing positioned the dukun as both indispensable to local health practices and emblematic of the epistemic disorder that colonial medicine claimed to rectify. Their presence in the archival record therefore, reflects not only their ubiquity but also the colonial state's anxiety over forms of healing that operated beyond biomedical categories.

As Hans Pols has shown, medical knowledge in colonial Java circulated through a heterogeneous network that included *dukun*, herbal traders, Chinese pharmacists, Indo-European women healers, Dutch physicians, and emerging Indonesian medical professionals. This diversity unsettles the common narrative of a simple divide between "traditional" and "Western" medicine (3). Instead, it reveals a dynamic medical field where different actors exchanged information, competed for authority, and coexisted within a contested landscape of legitimacy.

Colonial observers occasionally relied on *dukun* for empirical insight—particularly regarding plants and everyday remedies—yet the same observers characterised them as impediments to the advancement of Western medical rationality. These tensions underscore the ambivalent position of the *dukun* as both collaborator and problem within the colonial ordering of medical expertise. Colonial sources describe how dukun employed a layered therapeutic repertoire that combined massage (*pidjit*), poultices (*tapel, pilis, poepoek*), and intricate herbal preparations (*jamu*). These treatments cannot be understood solely through their material components, as they were embedded in ritual actions and cosmological reasoning that informed local interpretations of illness and healing (3,5,13).

Comprehending the daily practices of dukun involves placing their work within the illness patterns that influenced treatment choices during colonial Java. Public health reports note common ailments such as

fevers, respiratory disturbances associated with *masuk angin*, digestive complaints, musculoskeletal injuries, childhood illnesses, and reproductive conditions. Even during outbreaks of cholera, dysentery, or smallpox, many villagers continued to seek the services of *dukun*, despite the promotion of biomedical interventions (3,4). These patterns show that dukun remained trusted caregivers whose authority persisted within a shifting epidemiological landscape.

Narratives from the period portray dukun as practitioners who addressed a wide range of such conditions. Their treatments included massage for musculoskeletal pain, poultices and herbal mixtures for digestive or respiratory complaints, postpartum support, care for childhood ailments, and rituals for afflictions understood in spiritual or relational terms. These practices indicate that traditional healers operated through a repertoire of interconnected forms of care grounded in empirical experience, rather than offering isolated or incidental treatments.

Colonial writers often described the ritual gestures accompanying these treatments but framed them as irrational residues, thereby obscuring their epistemic significance. When these accounts are read against the grain, they reveal the *dukun* as epistemic mediators who interpreted illness through interconnected dimensions of bodily imbalance, environmental disturbance, spiritual disruption, and moral order. This interpretive labour—largely invisible to colonial taxonomies—demonstrates the sophisticated conceptual grounding of indigenous healing practices that colonial discourse could observe but could not fully recognise.

The role of the *dukun* resonates with broader scholarship on intermediaries in colonial science, including Kapil Raj's argument that cross-cultural knowledge production relies on actors who translate between epistemic worlds, and Lissa Roberts's insights into how practical and embodied expertise structures scientific exchange (23,24). Seen this way, the *dukun*'s labour constituted a form of epistemic mediation that located illness within relational, moral, and cosmological frameworks—dimensions that colonial archives recorded but could not fully comprehend.

The colonial archive also emphasises the diversity and specialisation within *dukun* practice: *dukun beranak* guiding childbirth; *tukang pidjit* providing musculoskeletal care; herbalists preparing remedies measured in hand spans, finger joints, or seeds; and ritual experts mediating between the human and unseen realms (8,13). Much of this knowledge circulated orally and was pragmatically adapted to local ecological conditions. Although colonial officials dismissed these interventions as irrational or imprecise, their enduring popularity in villages and towns indicates that they were perceived as effective and trustworthy within local epistemologies. The resilience of these practices—despite the introduction of Western medicine—reveals the limits of colonial authority in reshaping everyday healing. It also shows how indigenous understandings of health persisted, adapted, and reasserted themselves within the constraints of colonial classification.

Colonial ethnographies—most notably Maijer's interviews with more than fifty dukun—offer insight not into a transparent record of indigenous knowledge but into the representational frames through which colonial observers sought to make that knowledge legible. Maijer noted that many dukun, particularly elderly women but also several male specialists, articulated distinctions among bones, muscles, veins, and internal organs (13). Although they did not employ biomedical nomenclature, they recognised the spine, marrow, and brain as interconnected and vital. This suggests a vernacular anatomy grounded in embodied experience, apprenticeship, and oral transmission (13). The way these observations were recorded, focusing on aspects that corresponded to European anatomical expectations while overlooking cosmological or moral understandings of bodily order, reveals how the dukun's expertise was shaped and constrained by colonial classificatory logics. (23)

Other techniques described in these sources further illustrate both the coherence of indigenous healing and the limits of colonial interpretation. Practices such as *kerokan*—scraping the skin with coins or shells to produce redness—were framed by colonial writers as crude or unhygienic interventions (13,25). However, within Javanese epistemology, *kerokan* functioned as both diagnosis and therapy, grounded in the concept of *masuk angin*. This idiom interpreted illness as an imbalance involving wind, environment, and bodily permeability. The reddish streaks were not incidental marks but visible signs that disorder was leaving the

body, affirming the treatment's efficacy (25). When read critically, these descriptions reveal how colonial accounts registered the material act but misread or dismissed its epistemic rationale, thereby obscuring the sophisticated interpretive framework that shaped local understandings of illness and healing.

Colonial descriptions also highlighted ritual elements such as the burning of incense (*menyan*). Still, they typically interpreted these gestures as signs of superstition rather than as components of a coherent therapeutic system. One photograph frequently reproduced in colonial ethnography (Figure 1) depicts a dukun preparing remedies while smoke from burning incense rises beside him, a scene that colonial observers described in aesthetic or exoticizing terms (5,8,13). Within Javanese epistemology, however, *menyan* functioned as a medium that oriented treatment toward unseen forces and signaled that illness could involve disturbances beyond the material body (5,8,13). When read critically, such accounts reveal how colonial observers documented the sensory aspects of healing—such as fragrance, smoke, and recitation—while obscuring the interpretive frameworks that linked bodily and spiritual domains.

Colonial sources also commented on the social and economic position of *dukun*, often depicting their domestic settings as disordered or "primitive." Many obtained or cultivated their own medicinal materials, anchoring their work in household economies rather than formal institutions. Although colonial writers described their remedies as mild to suggest empirical limitation, such mildness reflected a pragmatic pharmacology suited to local ecologies and everyday ailments. Their authority likewise rested on social trust and interpersonal influence, which appeared in colonial accounts but was reduced to personal charisma rather than recognised as part of a relational model of healing.

Symbolic practices such as *menjampi obat*, including reciting incantations and lightly blowing or spitting over a remedy, were often dismissed as magical excess. These gestures demonstrate that efficacy was understood as arising not only from ingredients but also from ritual activation, intention, and moral positioning (5,13). Patients who brought their own ingredients to be "enchanted" participated in a form of healing grounded in shared assumptions about vitality, balance, and protection. Read through colonial documentation, these moments reveal how *dukun* expertise operated across material, relational, and cosmological registers, dimensions that the colonial archive selectively recorded and interpreted through its own assumptions about rationality and order.

Figure 1. A dukun practicing ritual healing with incense (5).

Jamu as everyday remedies and cultural practice

Grasping the essence of jamu involves connecting it to Javanese notions of the body and health, which highlight the importance of balance, awareness of environmental influences, and the management of internal conditions. These categories shaped how symptoms were recognised, how ingredients were chosen, and how treatments were sequenced. Establishing this ethnomedical frame also helps orient those accustomed to biomedical models and clarifies the logic of the remedies discussed below.

In Javanese tradition, *jamu* functioned not merely as a set of herbal preparations but as part of a broader epistemic framework that linked bodily processes, environmental influences, and spiritual balance. Illness was understood through categories such as *panas–adem* (heat–coolness), *angin* (wind), and internal equilibrium, directing diagnosis and therapy toward restoring harmony between the body and its surroundings. For *dukun*, preparing *jamu*—pounding roots, boiling leaves, macerating barks—was embedded in routines that combined empirical plant knowledge with embodied technique and ritual intention (5,11).

Colonial observers frequently noted the complexity of these mixtures, and this complexity carried meanings that extended beyond technical skill, as it conveyed ways of understanding therapeutic effectiveness through the alignment of material, relational, and spiritual forces (5,11). Approaching jamu as a set of interrelated practices, rather than as a mere collection of ingredients, highlights how health was reasoned through connections between body, nature, and the cosmos, informing diagnostic and therapeutic decisions in particular Javanese settings.

The variety of *jamu* formulations reflects not only the breadth of Javanese pharmacology but also the flexible ways in which knowledge circulated through households, markets, and communal networks. What colonial sources described as a proliferation of named formulas—*parem* for vitality, *galihan* for postpartum recovery, *toedjoeh angin* for digestive disturbances—were in fact vernacular classifications that indexed relationships between symptoms, bodily states, and everyday rhythms of work, reproduction, and ageing (2,10). These remedies were situated within everyday ecologies of care, where women cultivated turmeric, ginger, or lemongrass in their home gardens, adjusted recipes according to seasonal availability, and approached market vendors when particular ingredients were needed. Through these routines, *jamu* took shape both as household medicine rooted in everyday care and as a commodity influenced by local economic dynamics (7,9,11). More importantly, they demonstrate how medical knowledge was organized through embodied routines and social practices—through taste, texture, memory, and intergenerational instruction—rather than through textual codification or formal training. This everyday circulation of knowledge demonstrates that *jamu* was not merely consumed but continually reinterpreted, negotiated, and reproduced within social life.

Women in Java have long played a central role in the production and circulation of *jamu*, and their labour shaped the everyday infrastructures through which medical knowledge moved between households and markets (4,7). Their work extended beyond preparing remedies for kin and constituted a form of expertise grounded in cultivation, experimentation, and embodied skill. Within the household, women tended small gardens, selecting plants according to seasonal rhythms, and prepared remedies for children, postpartum mothers, or aging relatives—anchoring jamu within a gendered division of care in which authority arose from social expectation rather than formal recognition (4,7,11).

Outside the home, many women worked as itinerant jamu vendors (*tukang jamu gendong*), carrying freshly prepared mixtures along village paths and urban streets (5). Their mobility positioned them as key intermediaries in the circulation of medical knowledge, negotiating trust with customers and adjusting formulations to local preferences. Skills such as mixing, boiling, fermenting, judging freshness, or balancing flavours were transmitted matrilineally or through kin-based apprenticeship, forming collective and iterative forms of expertise grounded in relations of care (5). These embodied techniques—measuring ingredients by hand, recognising botanical qualities through smell or colour, or chanting softly while stirring—shaped the epistemic foundations through which jamu acquired its perceived efficacy.

In this configuration, Javanese women were not simply custodians of tradition but active agents whose reproductive labour and market participation sustained a broader medical economy. Their work linked domestic care with commercial exchange, anchoring jamu as both a household practice and a local commodity. Their authority, however, operated within structural limits, as colonial medical and economic institutions seldom recognised their expertise and continued to classify their work as informal. Acknowledging these dynamics shows how gendered labour shaped the production of jamu and how women's practices sustained, adapted, and expanded knowledge part of Javanese cultural life.

Women in Java have long been central to the production and circulation of *jamu*, serving as custodians of household health and contributors to the local economy. They cultivated medicinal plants in home gardens, gathered leaves, roots, and barks, and prepared daily remedies for their families. Many also worked as *tukang jamu gendong*, carrying bottles of freshly made jamu in bamboo baskets as they moved through villages and urban neighborhoods. Their expertise in mixing, grinding, boiling, and fermenting herbal ingredients was transmitted through oral tradition, often passed down through matrilineal lines or learned through apprenticeship within family networks (3–5). This intergenerational transmission ensured the continuity of specific recipes and embodied techniques—such as measuring by hand, balancing bitter and sweet flavors, or chanting softly while stirring—that gave *jamu* its efficacy. In this way, Javanese women were both healers and entrepreneurs, mediating between intimate household care and broader communal markets, while preserving and innovating a body of knowledge vital to Javanese cultural identity.

Beyond itinerant sellers, the circulation of jamu depended on fixed spaces such as warung jamu and market stalls, as illustrated in contemporary photographs of spice vendors in Javanese markets (Figure 2). These stalls operated not only as commercial sites but also as everyday infrastructures through which medical knowledge was exchanged between households and communal settings (5,11). Vendors, many of them women identified in colonial records as *tukang rempa rempa*—spice sellers who specialised in dried roots, seeds, and barks—or as *tukang tjeraken*, meaning sellers of medicinal herbs and ready-to-mix preparations, acted as informal consultants who interpreted symptoms, advised on formulations, and shared experiential knowledge shaped by years of practice (5). Transactions in these spaces involved more than just buying ingredients, as they also involved negotiations of trust and authority that positioned sellers as key intermediaries in local health economies. Through these interactions, markets became spaces where practical insight, ritual prescriptions, and personal testimony circulated together, forming a medical landscape that functioned alongside and sometimes in tension with colonial health institutions.

The ingredients available in these markets, whether roots, barks, leaves, aromatic seeds, or the occasional animal-derived substance, reveal how Javanese communities classified illness and organised pharmacological knowledge. Rather than following written manuals, buyers selected materials through embodied cues such as taste, smell, texture, and trusted guidance from experienced vendors. These practices reflected shared understandings of how the body responded to heat, wind, fatigue, reproductive cycles, or environmental shifts. Conversations at the stall often involved interpreting sensations and aligning them with categories of illness, demonstrating that therapeutic decision-making drew on collective experience rather than formal doctrine. In this sense, the marketplace did not serve merely as a repository of ingredients but rather as a dynamic arena where knowledge was exchanged, adapted, and evaluated within a moral economy of trust. What colonial observers described as disordered piles of herbs can instead be understood as reflecting practical forms of knowledge shaped by everyday routines and relational expertise.

Markets also circulated animal-derived substances that occupied a distinct place within Javanese therapeutic reasoning, as evident in early twentieth-century photographs of vendors selling dried skins, bones, and shells (Figure 3). These items were valued not simply for their material properties but for the ways they embodied principles of resemblance, vitality, and protection that structured indigenous understandings of illness (5). A sliver of dried deer or crocodile skin, a shaving of buffalo tendon, or the adhesive disk of *ikan gëmi* (commonly identified as remora, family

Figure 2. Market stall of spice and medicinal herb vendors in Java, early twentieth century (5).

Figure 3. Animal-derived medicinal materials sold at a Javanese market, early twentieth century (5).

Echeneidae) acquired meaning through a logic in which efficacy was linked to symbolic transfer rather than measurable dosage.

Sellers often prepared these mixtures through ritualised gestures—scraping a fragment over herbal powders while murmuring rhythmic phrases—which signalled that the remedy's force derived from the activation of relations between human, animal, and unseen entities (5). Such scenes demonstrate that healing in the marketplace operated through intertwined material and symbolic logics, with porous boundaries between pharmacology and ritual that were mutually reinforcing. Viewed this way, these animal substances show how everyday economic exchanges supported a broader understanding of potency rooted in the alignment of material properties, intention, and cosmological meaning.

As colonial engagement intensified, European physicians, pharmacists, and naturalists increasingly documented this therapeutic landscape through the lens of European medical rationality. Jamu and other indigenous formulations were commonly described as useful for maintaining vitality, aiding digestion, or supporting general health, while their functions in treating serious illness were minimised or omitted. This reframing positioned Javanese remedies as auxiliary rather than autonomous systems of cure. The process reflects a selective appropriation in which colonial science extracted botanical information but disregarded the relational and ritual dimensions that shaped local understandings of efficacy. By treating indigenous knowledge as empirical raw material stripped of the interpretive frameworks that gave it coherence, colonial medicine reinforced an epistemic order that privileged observation while marginalising the cosmological and experiential foundations of Javanese healing. This asymmetry shows how colonial authority reclassified jamu, confining it to a subordinate category of preventive or supportive care rather than recognising it as part of a fully developed medical system.

During colonial engagement, Javanese healers and their botanical knowledge were steadily repositioned as sources of data rather than as recognised authorities in their own right. Preparations that had once carried ritual force or cosmological meaning were translated into laboratory notes and taxonomic entries, a shift that detached recipes from the interpretive frameworks that shaped their original use. Plants such as *temulawak* (*Curcuma xanthorrhiza*), ginger (*Zingiber officinale*), and turmeric (*Curcuma longa*) were described in terms of their digestive or tonic value, while *brotowali* (*Tinospora crispa*) was noted for its bitter principles believed to cleanse the blood (7,10,11). These descriptions narrowed the conceptual range of the remedies by casting them as mild adjuncts suited for preventive care, rather than acknowledging them as part of a coherent medical system.

As colonial institutions expanded, selective incorporation of indigenous knowledge was formalised within laboratories, health services, and pharmacological surveys in the Netherlands Indies. The *pharmacologisch laboratorium* in Batavia and the *Dienst der Volksgezondheid* compiled catalogues of medicinal plants that systematised knowledge long maintained by Javanese healers. Dutch physicians and pharmacists translated these materials into Latin nomenclature, isolated active compounds, and reorganised them within European drug taxonomies.

Although many substances were subsequently categorised as tonics or household preventives, their inclusion nonetheless shaped colonial medical practice, producing a hybrid therapeutic environment in which imported pharmacology coexisted with tightly managed borrowings from local materia medica. In this hybridisation, indigenous remedies persisted but in forms detached from their ritual depth and cosmological coherence. Their presence in pharmacy education, public health campaigns, and clinical prescriptions signalled an institutional order in which Javanese knowledge contributed to colonial medical infrastructure while remaining subordinate to Western scientific norms.

Conclusion

This study demonstrates that healing in colonial Java—encompassed by the authority of the *dukun* and the everyday use of *jamu*—formed a dynamic field of knowledge characterized by negotiation, translation, and contestation, rather than simple displacement by Western medicine. A critical reading of colonial archives reveals how these sources simultaneously documented and distorted Indigenous epistemologies through classificatory schemes that fragmented ritual practice, obscured cosmological reasoning, and recast embodied expertise as superstition. Recognising these archival limits is essential for understanding how Indigenous healing entered the historical record.

The study demonstrates that *dukun* and *jamu* were integral, though unevenly positioned, in the making of colonial medical knowledge. Their practices provided empirical observations, botanical information, and everyday therapeutic techniques, even as colonial authorities marginalized their interpretive logics and subordinated them to biomedical norms. This selective incorporation produced a hybrid medical landscape that was neither neutral nor balanced, reflecting the

hierarchical and exclusionary values that structured colonial scientific authority.

Indigenous healing in Java persisted through a range of practices grounded in empirical experience and informed by cosmological reasoning that emphasized relationships between nature, the body, and the spiritual realm, as expressed through embodied forms of knowledge. Recovering these dimensions within mediated archival representations reveals how Javanese communities conceptualised health beyond biomedical definitions. These historical patterns also underscore the enduring significance of therapeutic pluralism in Indonesia, where interactions among *dukun, jamu* makers, biomedical personnel, and state institutions continue to influence authority, trust, and care-seeking practices. Consider these continuities to strengthen the relevance of this study for medical researchers and demonstrate that colonial encounters reshaped, rather than extinguished, Indigenous forms of healing.

The study presented here also points toward the limitations of relying exclusively on colonial archives. Further work is needed to incorporate alternative sources that preserve different registers of knowledge, including Javanese manuscripts, family-held notebooks, oral histories of healers and *jamu* makers, and ethnobotanical studies. Engaging these materials will deepen the reconstruction of Indigenous medical epistemologies and clarify the historical and postcolonial conditions under which they continue to evolve.

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