

Research Article

Traditional vs. Modern Medicine: Community Preferences and Health Anthropology in North Sulawesi

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Abstract

This study explores community preferences and decision-making in the use of traditional and modern medicine in North Sulawesi from a health anthropology perspective. Using a qualitative descriptive approach, in-depth interviews were conducted with 15 participants, and data were analyzed thematically to identify patterns of perception and factors influencing treatment choice. The results show that traditional medicine is preferred for mild illnesses due to perceptions of safety, affordability, and cultural familiarity, whereas modern medicine is favored for severe or chronic conditions because of its clinical validation, measurable outcomes, and professional supervision. However, a growing trend of complementary use, combining both traditional and modern treatments, was observed, motivated by safety concerns, family or peer advice, and information obtained through the internet, especially social media. The study concludes that decision-making in the use of traditional and modern medicine in North Sulawesi is influenced by illness severity, perceptions, social factors, and access to information. Traditional medicine is preferred for mild conditions, whereas modern medicine is used for severe or chronic illnesses. The combined use of both reflects a pragmatic approach within a pluralistic health system. These findings highlight the need for culturally grounded integration and improved health literacy.

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INTRODUCTION

The choice and use of traditional and modern medicine in Indonesia reflect a dynamic interplay among cultural heritage, community knowledge, and scientific innovation. Traditional medicine is deeply embedded in Indonesian society and widely perceived as inherently safe due to its natural origins and longstanding empirical usage. Conversely, modern biomedicine is regarded as rational, science-driven, and supported by systematic research, clinical validation, and technological advancement. These distinct perceptions significantly shape community preferences and health-seeking behaviors^{1,2}. However, these conditions also reveal an ongoing gap in public literacy regarding the safety, clinical efficacy, and regulatory status of both therapeutic systems. In particular, many individuals remain unfamiliar with standardized traditional medicine categories regulated by the Indonesian Ministry of Health, specifically Standardized Herbal Medicines and Phytopharmaceuticals, which have undergone rigorous standardization and clinical evaluation³. Recent initiatives emphasize developing accessible information platforms for pharmacists, such as the *Sistem Informasi Fitofarmaka* (SIFITA), to strengthen the integration of evidence-based traditional medicine across Indonesian healthcare⁴.

Beyond regulatory awareness, health-seeking behaviors are heavily influenced by sociodemographic and cultural factors, including education level, age, access to information, and established sociocultural beliefs⁵. Personal convictions and

psychological confidence, often linked to suggestive or placebo mechanisms, further contribute to the perceived efficacy of both traditional and modern treatments. Empirical evidence across Indonesia supports these observations. For instance, a study conducted in the Dieng Plateau of Central Java demonstrated that local communities preferentially utilize traditional preparations for self-medication because they are considered safe, natural, and effective for mild health conditions⁶. Similarly, an analysis of Indonesia's 2018 Basic Health Research dataset revealed that 73.8% of respondents had engaged in traditional medicine practices, indicating that age, gender, educational attainment, and proximity to health facilities are key determinants of therapeutic choice⁷.

Despite a growing literature on traditional healthcare utilization and public health outcomes in North Sulawesi, limited research has examined how community preferences are formed, negotiated, and transformed in daily social and cultural contexts, particularly regarding the concurrent use of traditional and modern medical systems. Existing studies frequently examine these two modalities as isolated or merely complementary options, without critically evaluating the complex decision-making processes, symbolic meanings, trust dynamics, and socioeconomic constraints that drive individual choices. Furthermore, the roles of intergenerational knowledge transmission, exposure to biomedical information, and evolving local cultural values remain insufficiently understood. To address these gaps, this study adopts a health anthropology perspective to examine not only what therapeutic choices are made, but why and how these decisions emerge within the lived experiences of the community in North Sulawesi. Ultimately, this study aims to describe community preferences and behaviors regarding the selection and use of traditional and modern medicine in North Sulawesi, and to identify the underlying social and cultural determinants that influence these choices, thereby establishing an empirical foundation for integrating traditional and modern medicine within a holistic, culturally grounded public health system.

MATERIALS AND METHODS

Materials

The study was conducted across two distinct municipal locations in North Sulawesi Province, Indonesia, representing urban and semi-urban/peri-urban environments: Manado and Bitung. Manado, as the provincial capital, represents an urban center equipped with established healthcare infrastructure, including public and private hospitals, primary healthcare centers, and retail pharmacies. Conversely, Bitung represents a semi-urban to peri-urban setting where access to formal health services is available but varies according to geographic distance, socioeconomic conditions, and facility distribution. Both field locations provided a rich contextual environment for evaluating therapeutic decision-making due to the active coexistence of biomedical health services and persistent traditional healing modalities. Study participants comprised adult community members aged 20 years or older who had firsthand experience using both traditional and modern medicines.

Methods

Study design and health anthropology framework

This research used a qualitative descriptive design, incorporating a health anthropology framework, to explore community knowledge, perceptions, and preferences regarding the use of traditional and modern medical systems. This methodological approach was selected to contextualize the cultural meanings, symbolic values, and social structures that influence health-seeking behaviors among communities in North Sulawesi.

Participant selection, sampling, and recruitment

Participants were recruited using a combination of purposive and snowball sampling strategies. Eligible individuals were adults (≥ 20 years of age) residing in Manado or Bitung who demonstrated personal experience with both traditional and biomedical therapies. Candidates were identified and approached through local community networks, received a comprehensive study orientation, and provided written informed consent prior to enrollment. In-depth interviews were conducted at mutually agreed-upon locations to ensure privacy and comfort. Recruitment proceeded iteratively until thematic data saturation was achieved across a total sample of 15 participants, defined as the point at which no new codes, sub-themes, or conceptual insights emerged from data analysis⁸.

Data collection and field procedures

Primary qualitative data were gathered through semi-structured, in-depth interviews and non-participant field observations. The interview guide explored central domains, including the timing, sequence, and situational context of selecting traditional or modern medicine; social, economic, and cultural factors influencing therapeutic choices; and personal beliefs regarding safety, clinical efficacy, and physical or financial accessibility⁹. Interviews were conducted in Bahasa Indonesia or local North Sulawesi dialects, lasted approximately 45 to 60 minutes each, and were digitally audio-recorded with explicit participant authorization. Contextual observations, non-verbal cues, and environmental dynamics were recorded in field notes to enrich data interpretation.

Ethical oversight and participant safeguards

This study received formal ethical clearance from the Health Research Ethics Committee at Poltekkes Kemenkes Manado (Ethical Approval Certificate No. DP.04.03/FXXX.28/424/2025). Prior to data collection, all participants received detailed information about the research aims, interview procedures, potential risks, and data protection measures, and provided written informed consent. Voluntary participation, confidentiality, and complete participant anonymity were strictly maintained throughout the research process using pseudonymization.

Data analysis

Qualitative data were analyzed using thematic analysis to identify, categorize, and interpret recurring patterns of meaning across participant narratives. Audio recordings were transcribed verbatim in Bahasa Indonesia and cross-referenced with field notes to ensure textual accuracy. The analytical workflow involved initial data familiarization, systematic open coding of key concepts, collation of codes into potential sub-themes, and refining main overarching themes using an inductive approach aligned with health anthropology principles. Themes were continually audited against raw transcript excerpts to verify interpretive validity, and finalized thematic structures were organized to describe the cultural, social, and structural determinants shaping medicine selection in North Sulawesi.

RESULTS AND DISCUSSION

The study included 15 participants residing in Manado and Bitung, North Sulawesi, who met the inclusion criteria of dual-use experience with traditional and biomedical health systems. The demographic distributions across age, gender, educational attainment, occupational status, and initial therapeutic preferences are summarized in [Table I](#). Participant profiles reflected diversity across age cohorts (33.3% aged 20–30 years; 20.0% aged >50 years) and educational levels (46.7% higher education; 40.0% secondary school). Notably, 53.3% of participants (n = 8) reported habitually combining traditional and modern medicines, whereas 26.7% initially selected modern biomedicine and 20.0% relied exclusively on traditional preparations. Qualitative findings revealed that therapeutic choices among communities in North Sulawesi are primarily guided by perceived disease severity, thereby establishing a dual decision-making pathway illustrated in [Figure 1](#). For self-limiting or mild health conditions (such as common colds, physical fatigue, low-grade fevers, or minor digestive discomfort), participants predominantly favored traditional medicine as a first-line intervention. This choice was driven by health perceptions, interpersonal social influence, inherited cultural values, and digital information acquired through internet search engines and social media platforms¹⁰. Traditional preparations were widely perceived as natural, gentle, non-toxic, and inherently safe for regular consumption. Mild symptoms were rarely viewed as medical threats requiring clinical consultation or synthetic pharmaceuticals. Participants expressed a preference for botanical remedies (*jamu*, ginger infusions, and turmeric decoctions) due to their local availability and perceived safety¹¹. Conversely, modern pharmaceuticals were viewed with caution for minor ailments due to concerns regarding synthetic chemical additives and adverse drug reactions. This risk-avoidance behavior reinforces the primary reliance on traditional therapies during early or mild disease stages¹². As articulated by participants:

"Kalau obat tradisional nda ada bahan pengawet dan gampang didapat cuma petik di muka rumah atau di rumah tetangga" ("If traditional medicine does not contain preservatives and is easy to get, just pick it in front of your house or at your neighbor's house") – Mr. N, 52 years old.

"Bagusnya pakai obat tradisional lebih aman" ("It's better to use traditional medicine, it's safer") – Ms. S, 27 years old.

Table I. Demographic characteristics of study participants (n = 15).

Demographic Characteristic	Category / Sub-group	Frequency (n)	Percentage (%)
Age Group (years)	20–30	5	33.3
	31–40	4	26.7
	41–50	3	20.0
	>50	3	20.0
Gender	Male	6	40.0
	Female	9	60.0
Educational Attainment	Primary School	2	13.3
	Secondary School	6	40.0
	Higher Education (University)	7	46.7
Occupational Status	Housewife	4	26.7
	Private Sector Employee	3	20.0
	Self-employed / Entrepreneur	4	26.7
	Civil Servant	2	13.3
	Others	2	13.3
Initial Medicine Selection	Traditional Medicine Only	3	20.0
	Modern Medicine Only	4	26.7
	Concurrent / Combination Use	8	53.3

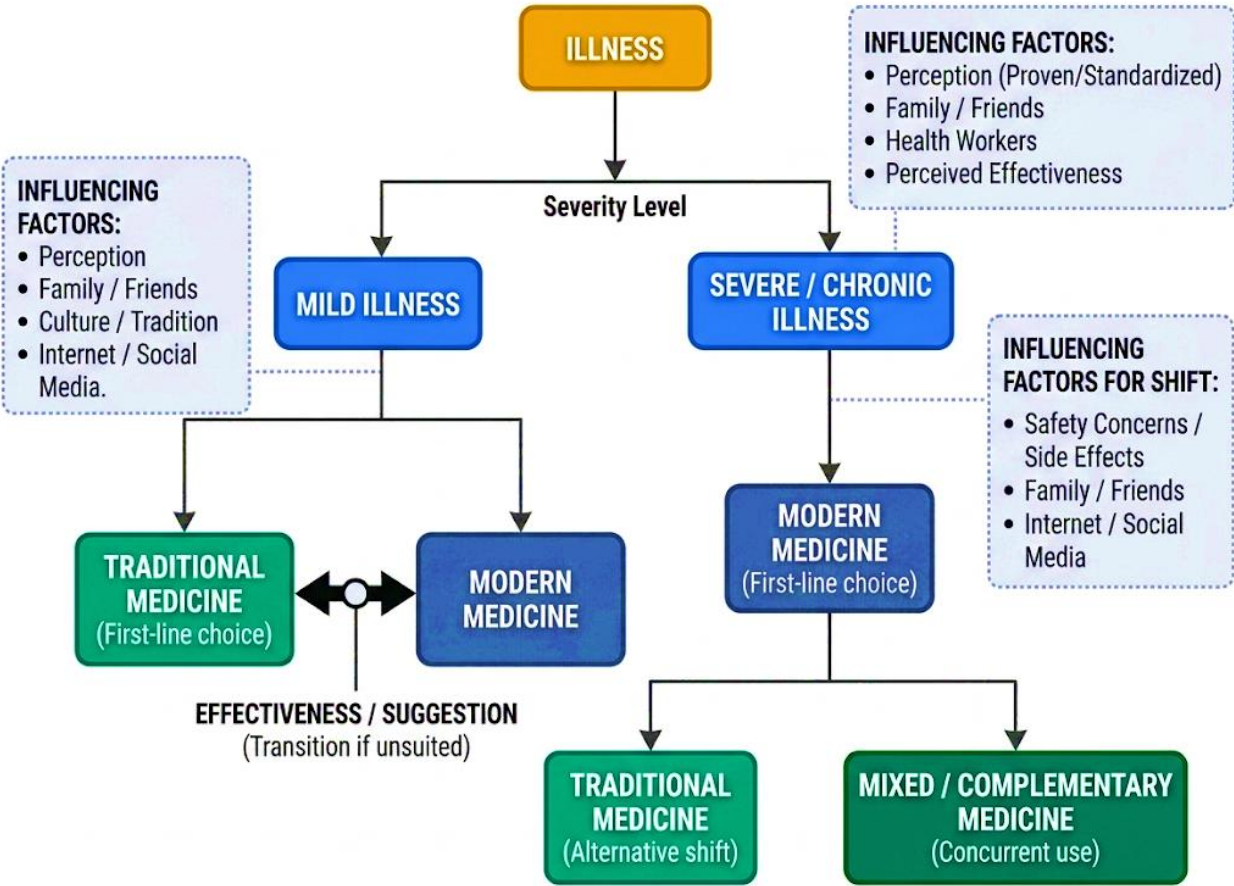


Figure 1. Decision-making framework in the selection and use of traditional and modern medicines in North Sulawesi.

Family members and close social networks played a central role in guiding health decisions. Recommendations regarding herbal formulations originated predominantly from parents or senior relatives:

"Tentu keluarga berpengaruh kalau tidak setuju saya pakai obat itu ya saya tidak pakai" ("Of course, my family has an influence, if they don't agree with me using that medicine, then I won't use it") – Ms. C, 37 years old.

"Pernah teman saya merekomendasikan obat tradisional terus saya coba" ("Once my friend recommended a traditional medicine and I tried it") – Ms. C, 37 years old.

Interpersonal trust within kinship networks proved more influential than formal medical advice for minor health concerns. The repetition of remedies that "worked" for family members maintains intergenerational continuity in traditional healing practices¹³.

Selecting traditional medicine for mild conditions reflects deeply rooted cultural values and intergenerational knowledge transmission. Utilizing botanical remedies serves both a therapeutic function and a means of preserving family heritage:

"Tradisi turun temurun sangat berpengaruh. Contohnya ibu saya mengajar kalau batuk parut kunir sejari pasti sembuh" ("Traditions passed down from generation to generation are very influential. For example, my mother taught me that if you have a cough, grate a finger of turmeric and it will cure you.") – Ms. C, 37 years old.

"Kalau ibu saya suka minum kunir setiap kali supaya nda lelah jadi saya sudah buat pencegahan minum tiga kali sehari untuk stamina" ("My mother likes to drink turmeric every time, so she doesn't get tired, so I have taken the precaution of drinking it three times a day for stamina") – Ms. G, 52 years old.

From an anthropological perspective, these narratives demonstrate that cultural frameworks continue to guide how local communities conceptualize, categorize, and manage minor physical imbalances¹⁴.

Digital platforms, including Google searches, Facebook, WhatsApp, and YouTube, act as modern amplifiers of traditional health practices:

"Aku cari di Google kalau batuk mau minum apa. Ya langsung aku coba" ("I Googled what to drink if I had a cough. So, I tried it straight away") – Mr. N, 52 years old.

"Biasa cari di Google penyebab dan solusinya" ("Usually search at Google cause and the solution") – Ms. C, 47 years old.

Online health information, often shared within community messaging groups, reinforces the perception that natural remedies are effective for minor ailments¹⁵. Although web-based information varies in scientific accuracy, digital exposure complements traditional trust structures, encouraging self-medication. However, when traditional remedies failed to yield perceived symptom relief, participants transitioned to modern pharmacy medications or clinical consultations:

"Yah kalau nda cocok yaa mau ke apotek cari obat" ("if it is not suitable, I will go to the pharmacy looking for medicine") – Mr. N, 52 years old.

"Kan kalau nggak bisa sembuh ya pakai obat modern" ("If it does not cure, I will use modern medicine") – Ms. C, 37 years old.

Conversely, individuals who initially sought clinical care for minor ailments reported switching to traditional remedies if modern treatments failed to provide immediate relief:

"Aku baru kena gangguan lambung sempat ke dokter dan dokter kasih obat" ("I just had a stomach problem, I went to the doctor, and the doctor gave me some medicine") – Mr. N, 52 years old.

"Saya pernah sudah coba berbagai obat batuk eh sembuh dengan madu dengan lemon" ("I already try so many cough remedies, but I am cured with honey and lemon") – Mr. N, 52 years old.

When managing severe, acute, or chronic health conditions (such as hypertension, diabetes, or severe infections), participants prioritized modern biomedicine for its scientific credibility, standardized dosing, professional guidance from health workers, and rapid onset of therapeutic action. Modern medicine was associated with diagnostic precision and proven clinical efficacy:

"Kalau obat modern sudah terbukti klinis" ("If it's modern medicine already clinically proven") – Mr. M, 47 years old.

"Obat modern kan sudah distandarisasi dari khasiat sampai dosisnya" ("Modern medicine has been standardized from its efficacy to its dosage.") - Ms. E, 45 years old.

Participants expressed confidence in pharmaceutical tablets, injections, and hospital care, viewing them as products of scientific research. The absence of standardized dosing in traditional preparations was seen as a potential risk during severe illness, positioning biomedicine as the rational choice for complex conditions¹⁶.

Social networks and healthcare professionals reinforced reliance on modern medicine during chronic or severe disease events:

"Mamaku pengguna amlodipine sudah lebih dari 20 tahun, jadi begitu tahu aku hipertensi dia bilang minum saja amlodipin" ("My mom has been using amlodipine for over 20 years, so when she found out I had hypertension, she said just take amlodipine.") - Ms. R, 52 years old.

"Aku langsung ke dokter terus dikasih resep amlodipin" ("I went straight to the doctor and was given a prescription for amlodipine") - Ms. C, 37 years old.

"Pertama periksa ke dokter ternyata gula tinggi langsung dikasih metformin untuk diabetes" ("First check with the doctor, it turned out that my blood sugar was high, so I was immediately given metformin for diabetes") - Ms. E, 45 years old.

Clear explanations from physicians, nurses, and pharmacists regarding diagnosis, dosage, and prognosis increased patient confidence¹⁷. Furthermore, the perceived speed and observable clinical outcomes of pharmaceuticals reinforced trust in biomedical interventions¹⁸:

"Obat modern kan sudah pasti efeknya" ("Modern medicine certainly has effects") - Ms. E, 45 years old.

"Obat modern lebih manjur" ("Modern medicine is more effective") - Ms. G, 52 years old.

This preference for biomedicine during severe illness aligns with findings by Widayati *et al.*⁶, who observed that communities routinely utilize traditional medicine for self-care but transition to modern facilities when managing serious diagnoses.

Despite prioritizing biomedicine for chronic diseases, long-term pharmaceutical use frequently introduces safety concerns, treatment fatigue, or fear of organ toxicity:

"Mama saya kena gagal ginjal karena terlalu lama minum metformin" ("My mom developed kidney failure due the long-term use of metformin") - Ms. E, 45 years old.

"Supaya cepat kasih turun darah tinggi, teman saya bilang minum daun sirsak rebus dan ternyata betul no" ("In order to quickly lower high blood pressure, my friend said to drink boiled soursop leaves, and it turned out to be true") - Ms. G, 52 years old.

"Saya baca di Google katanya daun yakona dapat menurunkan gula, jadi saya coba tapi saya hentikan obat doctor dulu" ("I read on Google that yacon leaves can lower blood sugar, so I tried it, but I stopped taking the doctor's medication first.") - Ms. E, 45 years old.

Concerns regarding renal or hepatic toxicity from prolonged synthetic drug intake prompted patients to seek herbal alternatives (such as soursop or *yakon* leaves) to "detoxify the body" or reduce pharmaceutical dependence^{19,20}. Digital health claims and social network recommendations further supported these shifts^{12,21}. From a health anthropology perspective, these transitions highlight how patients navigate chronic illness to balance efficacy, safety, and emotional well-being²².

A significant proportion of community members adopted a complementary model, combining prescribed pharmaceuticals with traditional herbal preparations:

"Saya minum daun sirsak siang tapi juga minum amlodipin pagi untuk membantu menurunkan tekanan darah" ("I drink soursop leaves in the afternoon but also take amlodipine in the morning to help lower blood pressure") - Ms. G, 52 years old.

This complementary pattern represents a pragmatic integration in which individuals seek rapid clinical control through biomedicine alongside the perceived holistic safety of traditional herbs⁴. Online platforms (Google, Facebook, WhatsApp, YouTube) facilitate this trend by providing accessible herbal information^{15,23}. This behavior reflects a shift away from viewing traditional and modern medicine as mutually exclusive, moving toward an integrative model that values both local wisdom and biomedical science²⁴.

The findings indicate that most participants strongly associate traditional medicine with natural ingredients, minimal adverse effects, and local cultural heritage. This aligns with the concept that traditional medicine carries symbolic and cultural resonance far beyond its strict pharmacological value, serving as a marker of local identity and collective memory^{7,19}. From a health anthropology perspective, the widespread assumption that natural remedies are inherently safe demonstrates how cultural cognitive frameworks shape community understandings of health, illness, and recovery. Even in the absence of clinical validation, community trust in traditional medicine remains robust because it resonates with experiential logic and local narratives of health preservation. In contrast, modern biomedicine is recognized as a product of empirical science, advanced technology, and rigorous clinical verification. Participants valued its measurable therapeutic outcomes and professional clinical oversight, particularly for severe, acute, or chronic conditions requiring technical intervention. However, this reliance coexists with underlying ambivalence, as several participants expressed apprehension regarding the synthetic "chemical" nature of pharmaceuticals and their long-term organ toxicity risks. These contrasting perceptions reflect Kleinman's framework of medical pluralism, wherein individuals fluidly navigate distinct medical traditions to secure both biomedical assurance and emotional or cultural comfort²⁵.

Therapeutic decision-making is rarely an isolated individual choice; rather, it is deeply embedded within social networks and collective family experiences. Kinship circles and community peers frequently act as the primary and most trusted sources of health information. Guidance from family members, particularly those with prior successful experiences using specific herbal remedies or modern therapies, exerts a decisive influence on individual choices. This pattern illustrates the social transmission of medical knowledge, in which trust is constructed through personal testimony and relational proximity rather than through formal scientific data²⁶. Furthermore, these interpersonal dynamics influence treatment persistence and adaptation. When biomedical interventions yield slow or unsatisfactory relief, family networks often encourage a transition toward herbal formulations or spiritual healing modalities²⁷. Conversely, positive health outcomes experienced within clinical hospital settings reinforce community trust in formal medical institutions. This reciprocal dynamic highlights the fluidity of health behavior, driven by relational and social logic rather than strictly by medical parameters.

In the contemporary digital era, social media platforms and online search engines have emerged as influential agents of health education and persuasion. Participants in this study routinely reported retrieving information regarding herbal preparations, home remedies, and therapeutic testimonials via Facebook, WhatsApp, YouTube, and Google searches. These digital platforms foster a hybrid knowledge ecosystem where scientific, commercial, and traditional cultural discourses intersect^{15,20}. While widespread digital access broadens public health awareness, it also risks circulating unverified information and encouraging the uncritical adoption of anecdotal claims. The digital environment frequently amplifies the appeal of herbal products by emphasizing "natural safety" while omitting potential adverse risks, contraindications, or the lack of standardization. Information systems and web-based platforms play an increasingly significant role in shaping healthcare knowledge acquisition and therapeutic choices, including the use of traditional preparations and standardized phytopharmaceuticals⁴. The availability of accessible, validated, and user-friendly digital resources can enhance public literacy and guide the rational use of traditional modalities. However, the variability of online information quality underscores the critical need for evidence-based digital health resources and enhanced digital health literacy, ensuring that individuals can critically evaluate online content and make informed decisions within a pluralistic healthcare setting.

A substantial proportion of participants reported practicing concurrent therapy, combining prescribed synthetic pharmaceuticals with traditional herbal teas or natural supplements. Rather than reflecting confusion in decision-making, this practice represents a calculated, strategic adaptation. Individuals deliberately integrate both therapeutic modalities to harmonize the rapid symptom relief of biomedicine with the perceived safety, gentle action, and holistic balance of traditional remedies⁴. From an anthropological standpoint, this dual use signifies an active negotiation between distinct therapeutic paradigms, in which cultural meanings of healing coexist with biomedical structures. This adaptive navigation reflects personal autonomy, resilience, and a holistic pursuit of well-being. It directly challenges the assumption that modern

biomedicine inevitably displaces traditional healing systems. Instead, both modalities coexist within a dynamic framework of pragmatic mutual reinforcement, aligning with the principles articulated in the World Health Organization's Traditional Medicine Strategy²⁸.

The persistent reliance on traditional medicine alongside modern clinical care demonstrates that communities value both scientific legitimacy and cultural resonance. Consequently, public health initiatives aimed at improving health literacy should not seek to suppress traditional beliefs, but rather build a bridge between local knowledge systems and evidence-based medicine. Regulatory frameworks established by the Indonesian government, including the development and formal recognition of Standardized Herbal Medicines and Phytopharmaceuticals, represent vital structural steps toward achieving this integration³. Healthcare professionals, particularly pharmacists and physicians, occupy a pivotal role in this process. Clinicians can actively screen for potential herb-drug interactions, guide patients on safe herbal administration, and provide evidence-based counseling without dismissing cultural values. Such interprofessional collaboration prevents irrational drug use while preserving cultural sensitivity. Furthermore, community-based education supported by validated digital platforms can counter online health misinformation and reinforce safe therapeutic practices. Ultimately, successfully integrating traditional and modern medicine requires not only policy directives but also a deep anthropological understanding, recognizing that true healing encompasses personal meaning, relational trust, and cultural identity alongside clinical efficacy²⁹.

CONCLUSION

This study demonstrates that decision-making regarding the use of traditional and modern medicine in North Sulawesi is primarily shaped by disease severity and driven by an interplay among health perceptions, social networks, cultural values, and exposure to digital information. For mild or self-limiting conditions, community members exhibit a strong preference for traditional medicine, motivated by perceptions of safety, cultural familiarity, kinship recommendations, and online information obtained through search engines and social media, and they transition to modern pharmaceuticals only when traditional remedies are deemed ineffective. Conversely, for severe, acute, or chronic illnesses, modern biomedicine serves as the primary therapeutic choice due to its proven clinical efficacy, standardized dosing, and professional healthcare guidance; however, patients frequently transition to traditional or complementary approaches when faced with long-term safety concerns, side effect anxieties, or persuasive social and digital influences. The widespread practice of combining traditional and modern therapies reflects a pragmatic adaptation to balance clinical effectiveness and perceived safety within a pluralistic healthcare environment. These findings underscore the need for a culturally grounded integrative health framework that promotes digital health literacy, ensures the safe co-administration of complementary modalities, and fosters interprofessional collaboration between biomedical clinicians and traditional health practices. Future research should investigate the specific impact of digital health literacy on therapeutic decision-making and validate these health-seeking patterns across broader, diverse regions of Indonesia.

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DATA AVAILABILITY

None.

CONFLICT OF INTEREST

The authors declare no conflicts of interest related to this study.

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