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Opinion

Traditional medicine use and unmet migraine needs: findings from a cohort study

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Abstract

Traditional, complementary and integrative medicine (TCIM) is frequently used by people with migraine, but epidemiological studies commonly reduce this behavior to a binary measure. A recent Berlin substudy of the German National Cohort classified TCIM use according to the number of modalities and frequency of use. Migraine diagnosis was not independently associated with any pattern, whereas users of migraine-specific medication showed numerically higher, but statistically non-significant, estimates for multimodal patterns. This finding should not be interpreted as evidence that medication failure causes TCIM use. Instead, it supports a testable, pattern-based framework. Single rare use may represent experimentation; single frequent use, selective consolidation; multiple rare use, an ongoing therapeutic search; and mixed frequent use, integrated self-management. Each pattern also has competing explanations involving access, cost, habit, culture, perceived benefit, and disease burden. Clinicians should therefore ask what is used, how often, for what purpose, with what perceived effect, and alongside which medications. Longitudinal studies that measure migraine burden, treatment response, motivation, safety, and transitions between patterns are needed. Pattern-based characterization may improve patient-centered care and generate hypotheses, but it cannot establish unmet need from cross-sectional data alone.

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Introduction

Migraine is one of the leading causes of disability worldwide and imposes a particularly high burden during the most productive years of life. More than one billion people are estimated to live with migraine, and the disorder remains a major source of years lived with disability (1,2). Despite major advances in acute and preventive treatment (3–5), many patients combine pharmacological treatment with non-pharmacological, traditional, complementary, or integrative approaches.

Nearly half of adults with migraine or severe headache in a United States population survey reported using complementary or alternative approaches, a substantially higher proportion than among adults without headache (6). Traditional, complementary and integrative medicine (TCIM) is also common in Germany and among people living with chronic pain (7,8). The term TCIM is descriptive rather than evaluative: it encompasses heterogeneous practices with markedly different evidence, regulation, cost, and safety profiles (9).

Most epidemiological studies nevertheless classify TCIM use as simply present or absent. This binary approach may conceal clinically relevant differences in the number of modalities used, frequency of use, purpose, and relationship to conventional treatment. A pattern-based description may offer a more informative view of how people construct their therapeutic strategies.

The Berlin substudy of the German National Cohort (NAKO) merits critical analysis because it is one of the few population-based studies in Germany to classify TCIM use by both the number of modalities and the frequency of use, and because it reports estimates specific to migraine and to migraine-specific medication (10). Its design, however, leaves important gaps. Migraine was based on self-reported physician diagnosis rather than on standardized criteria; the analysis is cross-sectional, so the sequence of medication use and TCIM use cannot be established; and TCIM was restricted to seven non-pharmacological modalities, excluding herbal products, dietary supplements, and other practices frequently used by people with migraine. Migraine-related estimates rest on small subgroups with very wide confidence intervals, the models were simultaneously adjusted for chronic headache and pain, which may absorb part of any migraine-related association, and no migraine-specific measures of attack frequency, disability, or treatment response were available. The sample was also drawn from a single urban study center and is not representative of the German population. Its most suggestive migraine finding, a numerically higher estimate of multimodal use among users of migraine-specific medication, is statistically non-significant and therefore easily over-interpreted as evidence of pharmacological failure.

Identifying the multiple ways in which people with migraine combine TCIM with conventional care has both scientific and social relevance. Scientifically, patterns of use can help distinguish adjunctive from substitutive use and generate testable hypotheses about disease burden, treatment response, and unmet therapeutic goals. Socially, TCIM use frequently involves out-of-pocket spending, is often not disclosed to clinicians, and can carry risks of interaction or of delay in effective treatment (6,9). It is also a matter of explicit health policy: the World Health Organization encourages the integration of safe and effective traditional and complementary medicine into health services (11), and Brazil has offered integrative and complementary practices within its public Unified Health System (SUS) since 2006 (12). How these practices are used therefore matters for how they are discussed in consultations, regulated, and incorporated into different health-care contexts.

In this opinion article, we critically examine the migraine-related findings of the NAKO Berlin substudy, clarify what they can and cannot support, and propose a pattern-based framework, paired with competing explanations, to guide clinical assessment and future research on TCIM use in migraine.

What the NAKO Berlin data show - and do not show

The Berlin substudy of the German National Cohort included 1,970 participants, of whom 52.2% reported TCIM use (10). Participants were classified as never-users or into four patterns: single rare, single frequent, multiple rare, and mixed frequent use. A self-reported physician diagnosis of migraine was not independently associated with membership in any TCIM group. Chronic headache also showed no statistically significant association, while chronic back pain and osteoarthritis were more consistently related to TCIM use.

The most provocative observation concerned migraine-specific medication. Point estimates were numerically higher for the multiple-rare and mixed-frequent groups than for single-modality groups. However, confidence intervals were wide and crossed unity (10). The result is therefore exploratory and statistically non-significant. It does not demonstrate that medication use leads to multimodal TCIM, that pharmacological treatment is inadequate, or that TCIM use improves migraine outcomes.

Migraine-specific medication use is an imperfect marker. It may reflect diagnostic recognition, disease severity, treatment access, clinician preference, patient preference, or health-care engagement. Conversely, non-use may reflect mild attacks, contraindications, poor access, diagnostic gaps, concern about adverse effects, or reliance on non-pharmacological strategies. Any interpretation must preserve this uncertainty.

From prevalence to therapeutic trajectories

The NAKO classification can be reframed as a set of possible therapeutic trajectories rather than a hierarchy of intensity. The interpretations in Table 1 are deliberately paired with competing explanations. They are hypotheses to be tested, not labels to be assigned to individual patients.

Table 1. Proposed interpretations and competing explanations for TCIM-use patterns

TCIM pattern	Possible interpretation	Competing explanation	Clinical question
Single rare	Occasional experimentation with one modality	Poor access, cost, low benefit, or adverse experience	What was tried, for what purpose, and why was it not continued?
Single frequent	Selective consolidation around one perceived useful modality	Habit, convenience, limited alternatives, or non-migraine use	What benefit is perceived, and is it reflected in migraine outcomes?
Multiple rare	Ongoing therapeutic search across several options	Curiosity, fragmented advice, or episodic availability	Which unresolved symptom or concern is driving repeated trials?
Mixed frequent	Integrated multimodal self-management	High disease burden, dissatisfaction, polytherapy risk, or persistent symptoms	How do the modalities interact with medication, safety, cost, and treatment goals?

Single rare use may represent occasional experimentation, but it may also indicate poor access, cost, low perceived benefit, or an adverse experience. Single frequent use may indicate selective consolidation around one preferred modality, although habit, availability, or limited alternatives are equally plausible. Multiple rare use may suggest an unresolved search for relief but could simply reflect curiosity or fragmented advice. Mixed frequent use may represent integrated self-management, yet it may also accompany persistent symptoms, high treatment burden, or unrecognized safety risks.

Why medication and multimodal TCIM may coexist

Several non-exclusive mechanisms could explain why migraine-specific medication and multimodal TCIM use coexist. First, patients with more frequent, severe, or disabling migraine may require medication and still seek additional symptom control. Second, partial response, adverse effects, or treatment expectations may encourage add-on strategies. Third, multimodal use may reflect active self-management and a stronger orientation toward health-related behaviors rather than dissatisfaction (6,13). Fourth, greater contact with health professionals may increase exposure to both conventional and complementary recommendations.

Cultural explanatory models, family advice, financial constraints, availability, and beliefs about naturalness or safety may be equally important. These factors can influence whether TCIM is used as an adjunct, a substitute, a preventive routine, or an acute rescue strategy. Cross-sectional data cannot determine the sequence: multimodal use may follow inadequate control, precede medication initiation, or develop independently of migraine response.

Clinical implications

For clinicians, the practical implication is not to treat multimodal TCIM use as a surrogate for treatment failure. It is to replace the binary question "Do you use complementary therapies?" with a structured therapeutic history. The discussion should identify the modality, frequency or dose, intended purpose, source of recommendation, perceived benefit, adverse effects, cost, and concurrent medications.

This approach has three advantages. It can uncover unmet goals that were not expressed during routine assessment; it can identify potential interactions, duplication, or delay of evidence-based care; and it can recognize effective self-management practices that matter to the patient. Open, non-judgmental communication is particularly important because patients may not spontaneously disclose supplements, herbal products, manual therapies, or culturally embedded practices (9).

The clinical assessment should remain modality-specific. The presence of TCIM use does not establish efficacy, and the absence of medication use does not establish poor care. Likewise, medication-overuse headache should be assessed according to medication exposure and headache frequency, not inferred from the mere coexistence of medication and TCIM (14). Lifestyle measures with established clinical relevance should be discussed separately from therapies with limited or uncertain evidence (15).

Pattern-based findings should also not be transferred directly between health systems. The same pattern of TCIM use may carry a different meaning where such practices are publicly funded, as in the Brazilian SUS (12), than where they are mainly paid out of pocket, so coverage, regulation, and cultural context must be considered when interpreting and applying them.

A research agenda

Future studies should move beyond prevalence and record the temporal architecture of treatment. Longitudinal cohorts should measure monthly migraine days, attack severity, disability, acute and preventive medication use, treatment response, medication-overuse status, adverse events, access, out-of-pocket cost, and the reasons for starting, continuing, combining, or abandoning each modality.

The distinction between adjunctive and substitutive use is essential. Sequence analysis or repeated latent-class models could test whether patients transition from experimentation to consolidation, from single to multimodal use, or from multimodal use back to fewer therapies after improved control. Qualitative interviews should examine how cultural explanatory models, trust, stigma, family networks, and professional advice shape these transitions.

A clinically meaningful hypothesis would be that transition toward increasingly multimodal use predicts persistent disability or dissatisfaction after adjustment for baseline disease burden and access. The competing hypothesis is that stable multimodal use reflects successful, preference-concordant self-management. Only longitudinal data that include patient-reported goals and outcomes can distinguish these possibilities.

Conclusion

TCIM use in migraine should be studied as a pattern and a trajectory rather than as a binary behavior. The NAKO Berlin findings do not establish an association between migraine medication and multimodal TCIM use, but they identify a clinically relevant question. Multimodal use may signal unmet need, greater disease burden, active self-care, cultural preference, or several of these factors at once. Pattern-based characterization can improve clinical conversations and generate testable hypotheses, provided that uncertainty is explicit and causal claims are avoided.

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