Health problems and factors associated with traditional Thai medicine preferences among postpartum mothers: a cross-sectional analytical study in northeastern Thailand

Problemas de salud y factores asociados a las preferencias por la medicina tradicional tailandesa en madres en el posparto: un estudio analítico transversal en el noreste de Tailandia

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Abstract

Introduction: Traditional Thai medicine (TTM) postpartum care is a cultural therapeutic physical activity designed to restore bodily heat and four-element balance through eleven structured practices. While these methods-including thermal therapies and manual physical interventions—are integral to maternal recovery, academic evidence regarding maternal preferences and their adaptive significance remains limited.
Objective: This study assessed postpartum health problem levels, examined maternal preferences for eleven TTM methods, and determined associated factors among postpartum mothers in northeastern Thailand, framed within Rubin's Postpartum Adaptation Theory.
Methodology: A cross-sectional analytical study was conducted with 480 postpartum mothers in Ubon Ratchathani Province, recruited via multi-stage probabilistic sampling. Data were collected using validated instruments (Cronbach's alpha = 0.82) and analyzed using descriptive statistics and correlation analysis to identify associated factors.
Results: Mothers reported moderate levels of health problems, with adaptation-related issues and functional dependency being most prominent. Preference for TTM was high, particularly for heat-based and physical therapy modalities. Educational attainment, prior birthing experience, and socioeconomic interpersonal risks were found to be significantly associated with TTM preferences ($p < 0.05$).
Conclusions: The findings suggest that TTM preferences are closely related to the maternal transition and the need for functional recovery. Integration of these culturally grounded physical activities into contemporary maternal care could enhance postpartum adaptation.

Keywords

Postpartum care, traditional thai medicine, physical activity, maternal adaptation, associated factors, northeastern Thailand.

Resumen

Introducción: La medicina tradicional tailandesa (TTM) posparto se conceptualiza como una actividad física terapéutica cultural diseñada para restaurar el calor corporal y el equilibrio de los cuatro elementos mediante once prácticas estructuradas. Aunque estos métodos—que incluyen terapias térmicas e intervenciones físicas manuales—son integrales para la recuperación materna, la evidencia académica sobre las preferencias maternas y su significado adaptativo sigue siendo limitada.
Objetivo: Este estudio evaluó los niveles de problemas de salud posparto, examinó las preferencias por once métodos de TTM y determinó los factores asociados en madres posparto del noreste de Tailandia, bajo el marco de la Teoría de la Adaptación Posparto de Rubin. Metodología: Estudio analítico transversal con 480 madres posparto en la provincia de Ubon Ratchathani, reclutadas mediante muestreo probabilístico multietápico. Los datos se recopilaron con instrumentos validados (alfa de Cronbach = 0.82) y se analizaron con estadística descriptiva y análisis de correlación para identificar asociaciones significativas.
Resultados: Las madres reportaron niveles moderados de problemas de salud, destacando los problemas de adaptación y la dependencia funcional temprana. La preferencia por la TTM fue alta, especialmente en las modalidades de calor y terapia física. El nivel educativo, la experiencia previa en el parto y los riesgos socioeconómicos-interpersonales resultaron estar significativamente asociados con las preferencias de TTM ($p < 0.05$). Los niveles de problemas de salud correlacionaron positivamente con la intensidad de la preferencia.
Conclusiones: Los hallazgos sugieren que las preferencias por la TTM están estrechamente relacionadas con la transición materna y la necesidad de recuperación funcional. La integración de estas actividades físicas con base cultural en los modelos de atención materna contemporánea podría mejorar significativamente la adaptación posparto.

Palabras clave

Atención posparto, medicina tradicional tailandesa, actividad física, adaptación materna, factores asociados, noreste de Tailandia.

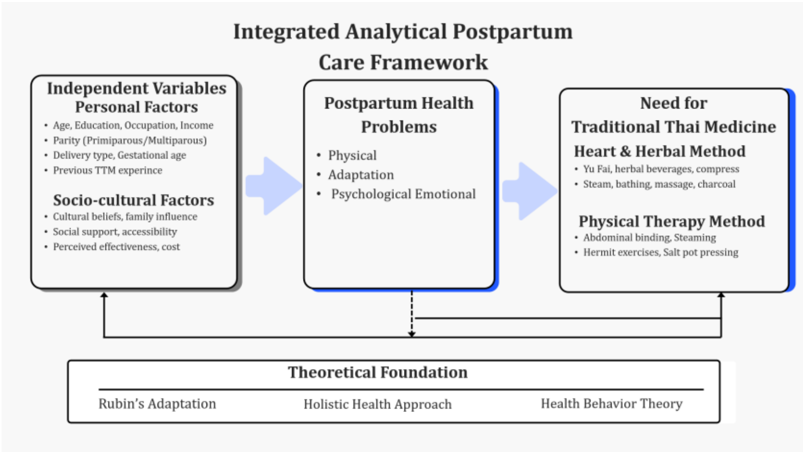
Introduction

The postpartum period constitutes a critical transition requiring simultaneous physical recovery, role adaptation, and psychological-emotional adjustment (Rubin, 1984). These dimensions interact dynamically: physical symptoms such as pain, fatigue, and sleep disruption impair caregiving capacity and intensify relational strain, while psychological distress diminishes coping resources and amplifies perceived discomfort, thereby compromising maternal well-being and infant care quality (Rubin, 1984). Thailand exhibits substantial postpartum health burdens, particularly in northeastern regions, where the ASEAN region's highest postpartum depression rate of 74.1% has been documented (Hong & Buntup, 2023). Northeastern populations face compounded vulnerabilities through low income, limited social support, and spousal conflict (Phoosuwan et al., 2020), underscoring that postpartum outcomes depend not solely on symptom severity but also on available resources, interpersonal support quality, and care option compatibility with maternal beliefs and circumstances. Traditional Thai medicine remains influential in postpartum care, rooted in four-element balance theory and heat restoration principles following childbirth (Dennis et al., 2007). This system encompasses eleven established methods, including Yu Fai (fire therapy), warm water and herbal beverage consumption, herbal compress therapy, and traditional massage (Dennis et al., 2007). Beyond cultural significance, these practices demonstrate clinical relevance: 55.9% of Bangkok mothers intended postpartum traditional Thai medicine utilization (Sirichai et al., 2025), herbal compress therapy proved superior to conventional hot compress for breast engorgement relief (Ketsuwan et al., 2018), turmeric reduced postpartum depression and anxiety (Ketsuwan et al., 2018), and systematic reviews confirmed Thai herbal compress therapeutic benefits (Dhippayom et al., 2015).

Despite effectiveness evidence for specific interventions, research explaining maternal preferences for traditional Thai medicine methods remains insufficient. Existing studies suggest birth experience and educational level influence acceptance, yet evidence remains preliminary and rarely examines method-specific preferences. Postpartum adaptation theory indicates that first-time mothers have distinct support requirements compared to experienced mothers(Shorey et al., 2018), suggesting parity shapes both health concerns and perceived care utility, while highly educated groups demonstrate decreased traditional medicine acceptance (Gelaye et al., 2016). Most research fails to connect maternal health problem profiles with method-specific preferences, and without analyzing relationships between symptom levels across physical, adaptation, and psychological-emotional dimensions (Rubin, 1984) and preferences for all eleven methods (Dennis et al., 2007), the understanding of how needs translate into utilization intentions remains incomplete. Cross-cultural evidence reveals postpartum traditional medicine use varies across Southeast Asian settings (Ridzuan et al., 2021); (Arnida et al., 2022), yet context-specific evidence from northeastern Thailand examining postpartum health problems alongside preferences across all traditional Thai medicine methods remains necessary.

This study addresses existing research gaps by employing an Integrated Analytical Postpartum Care Framework that synthesizes contemporary biomedical perspectives with Traditional Thai Medicine (TTM) modalities. Central to this framework is the integration of Rubin's Postpartum Adaptation Theory (1984) (Rubin, 1984) and, which conceptualizes the postpartum period as a critical phase of maternal transition requiring significant physical and psychological restructuring. Within this academic context, TTM practices, ranging from thermal therapies to manual physical interventions, are viewed not merely as cultural traditions but as forms of cultural therapeutic physical activity that facilitate the 'taking-hold' phase of maternal recovery by restoring functional autonomy and physiological homeostasis. Furthermore, the framework incorporates Health Behavior Theory to elucidate maternal care-seeking behaviors, interpreted through the lenses of recovery beliefs, perceived benefits and barriers, and the availability of sociocultural support. The conceptual model delineates complex relationships among personal determinants, sociocultural factors, and postpartum health problems across physical, adaptive, and emotional dimensions. Specifically, it categorizes TTM preferences into heat-herbal interventions and physical therapy modalities, reflecting the four-element balance principles inherent in Thai traditional science. Conducted in Ubon Ratchathani Province, where traditional practices coexist with modern biomedical services, this investigation systematically assesses maternal preference levels for eleven TTM methods (Dennis et al., 2007). By examining health problems across three dimensions and determining associated factors, including birthing experience, educational attainment, and socioeconomic-interpersonal risks, this study provides a comprehensive academic analysis of how culturally grounded physical engagement supports maternal adaptation and holistic recovery in the northeastern Thai context.

Figure 1. Integrated analytical postpartum care framework.



Method

Study design

This research utilized a quantitative cross-sectional analytical study design conducted in Ubon Ratchathani Province, northeastern Thailand, between July and December 2024. This province was selected as a representative area where traditional wisdom coexists with modern medicine, demonstrating typical characteristics of northeastern Thai communities where traditional Thai medicine practices remain prevalent in postpartum care.

Sample size calculation

Sample size was calculated using G*Power 3.1.9.4 for multiple linear regression analysis with the following parameters: $\alpha = 0.05$, power = 0.80, effect size $f^2 = 0.15$ (medium), tested predictors = 4, total predictors = 8. The minimum required sample was 389 participants. The final sample included 480 participants (23.4% increase) to account for 10% potential non-response and to enable robust subgroup analyses.

Sampling method

Multi-stage probability sampling was employed:

Stage 1: Proportional allocation across 25 districts using the formula:

$$n_i = \frac{N_i}{N} \cdot n$$

Where n_i = district sample,

N_i = district postpartum population,

N = total postpartum population (13,845)

n = total required sample (480)

Stage 2: Stratified random sampling by area type (urban/semi-urban/rural) within selected districts was applied to ensure geographic representativeness.

Stage 3: Systematic random sampling from eligible participants identified through health-promoting hospitals was performed. A sampling frame was constructed from postpartum mother registrations, and every kth participant was selected using computer-generated random numbers (k = sampling interval calculated as population size/required sample per district).

Participants

Eligible participants were postpartum mothers aged 18 to 45 years who had delivered at term (≥ 37 weeks of gestation) by either normal vaginal delivery or cesarean section and were between 6 weeks and 6 months postpartum at the time of recruitment. To ensure a relatively comparable maternal and infant health context for assessing postpartum health problems and care preferences, inclusion also required an infant birth weight of at least 2,500 g and the mother's ability to communicate effectively in Thai. Participants were required to have resided in Ubon Ratchathani Province for at least 6 months to increase the likelihood that their postpartum care experiences and traditional Thai medicine exposure reflected the local service environment. Mothers were also included only if they had no severe psychiatric disorders or cognitive impairment that could compromise reliable self-reporting and if they provided voluntary informed consent, consistent with ethical requirements for research involving human participants.

Mothers were excluded if they presented with severe postpartum complications requiring intensive medical care, because acute clinical instability could alter both the nature of postpartum health problems and the feasibility of participating in a survey-based study. Exclusion criteria also removed cases that could substantially change postpartum recovery demands or care pathways, including preterm delivery (< 37 weeks of gestation), infant birth weight below 2,500 g, multiple pregnancy (for example, twins or triplets), or major congenital anomalies in the infant. Participants were further excluded when complete information could not be obtained due to communication barriers, when they were unwilling to participate or to provide informed consent, or when they had moved out of the study area before data collection, as these conditions would reduce data completeness and threaten the integrity of comparisons across the sample.

Data collection instruments

The research instrument was a structured questionnaire developed based on an extensive literature review and validated through a comprehensive validation process. The questionnaire comprised 4 main sections:

Section 1: Demographic and obstetric characteristics were assessed across fifteen items, encompassing maternal age, education level, occupation, family income, parity, type of delivery, gestational age at delivery, birth weight, and previous experience with traditional Thai medicine.

Section 2: Postpartum health problems were assessed across three dimensions using a 5-point Likert scale ranging from 0 (never) to 4 (always). The first dimension, physical problems, comprised twelve items, including fatigue, back pain, breast engorgement, perineal discomfort, sleep disturbances, appetite changes, wound healing issues, urinary problems, constipation, headaches, joint pain, and mobility limitations. The second dimension, adaptation problems, also included 12 items, such as role adjustment, dependency on others, childcare confidence, time management, social role changes, family relationship adjustments, work–life balance, decision-making confidence, routine establishment, support system utilization, lifestyle modifications, and independence recovery. The third dimension, psychological-emotional problems, encompassed 12 items, including anxiety, mood changes, crying episodes, irritability, feelings of overwhelm, sadness, fear, emotional lability, concentration difficulties, memory problems, self-confidence issues, and social withdrawal. Health problem severity was interpreted according to mean scores, with 0.00 - 1.33 indicating a low level, 1.34 - 2.67 a moderate level, and 2.68 - 4.00 a high level.

Section 3: Preferences for traditional Thai medicine in postpartum care were assessed across eleven established methods using a 4-point Likert scale, ranging from 1 (not needed) to 4 (very much needed). Seven heat and herbal methods were included: Yu Fai (fire therapy), warm water and herbal beverages, herbal compress therapy, herbal steam therapy, herbal water bathing, traditional Thai massage, and charcoal sitting. In addition, four physical therapy methods were examined: abdominal binding, abdominal steaming, hermit stretching exercises, and salt pot pressing. The interpretation of preference scores was categorized as follows: 1.00 - 1.75 indicating a low level of need, 1.76 - 2.50 a moderate level, 2.51 - 3.25 a high level, and 3.26 - 4.00 a very high level.

Section 4: Factors associated with preferences for traditional Thai medicine include eight key aspects:cultural beliefs, family influence, prior experience, healthcare provider recommendations, perceived effectiveness, accessibility, cost considerations, and social support.

Instrument validation

Instrument

The measuring instruments used in this research were developed based on literature review and related research, comprising four sections. The first section collected general information and personal factors through 15 items, including age, education, occupation, income, and birth experience. The second section assessed postpartum maternal health problems across three dimensions through 36 items, including physical problems (12 items), adaptation problems (12 items), and psychological-emotional problems (12 items), using a 5-point Likert scale from 0 (never) to 4 (always). The third section evaluated Traditional Thai Medicine preferences through 11 items representing different Traditional Thai Medicine practices using a 4-point Likert scale from 1 (not needed) to 4 (very much needed). The fourth section examined factors associated with preferences through 8 items related to cultural beliefs, family influence, and previous experience. Content validity was assessed by five experts, including an obstetrician-gynecologist, 2 Traditional Thai Medicine specialists, a maternal-child nursing instructor, and a community health researcher. Each item was evaluated for relevance and clarity. The Index of Item-Objective Congruence values ranged from 0.78 to 1.00 (criterion ≥ 0.5), indicating acceptable content validity. Reliability testing was conducted with 30 pilot participants who were not included in the main study. Cronbach's Alpha coefficients were calculated, yielding 0.89 for overall health problems, 0.85 for physical problems, 0.82 for adaptation problems, 0.87 for psychological-emotional problems, and 0.91 for Traditional Thai Medicine preferences, all exceeding the acceptable threshold of 0.70.

Data collection procedures

Data collection was implemented through coordinated collaboration with the Ubon Ratchathani Provincial Public Health Office and the district health offices to ensure consistent access to eligible postpartum mothers and to align field procedures with local service structures. Research assistants completed a standardized 8-hour training program that covered ethical conduct, informed consent procedures, culturally appropriate communication, and structured interview administration to promote accuracy and consistency across data collectors. Eligible participants were identified through health-promoting hospitals and community health centers. Initial outreach was facilitated by local healthcare workers who introduced the study and provided basic information in a manner that minimized pressure to participate. Mothers who expressed interest were then approached by trained research assistants who explained the study objectives, data collection procedures, potential benefits and risks, confidentiality safeguards, and the voluntary nature of participation, including the right to refuse or withdraw without consequences. Written informed consent was obtained before any data were collected. Interviews were conducted face-to-face in Thai, either at participants' homes or at local health facilities according to each mother's preference, and each interview took approximately 25 to 30 min. To strengthen data quality, completed questionnaires were checked immediately after the interview for completeness and internal consistency, allowing clarifications to be made promptly while maintaining respect for participants' comfort and privacy.

Statistical analysis

Statistical analysis was performed using IBM SPSS Statistics version 26.0 with significance levels set at $\alpha = 0.05$. Data were checked for completeness, outliers, and normality using Shapiro-Wilk test and visual inspection.

Descriptive statistics included frequencies, percentages, means, and standard deviations. Normality was assessed using Kolmogorov-Smirnov and Shapiro-Wilk tests. Homogeneity of variance was tested using Levene's test.

Inferential statistics included independent t-tests and one-way ANOVA with Tukey HSD post-hoc analysis (with Cohen's d and eta-squared for effect sizes), Mann-Whitney U and Kruskal-Wallis tests for non-parametric data, Pearson correlation analysis, and stepwise multiple linear regression. Bonferroni correction was applied for multiple comparisons. Effect sizes were interpreted as small ($d = 0.20$, $r = 0.10$), medium ($d = 0.50$, $r = 0.30$), and large ($d = 0.80$, $r = 0.50$).

Multiple regression assumptions were verified: linearity (scatterplots), independence (Durbin-Watson test), homoscedasticity (residual plots), normality of residuals (P-P plots), and absence of multicollinearity (VIF < 10, tolerance > 0.10).

Ethical considerations

Ethical approval was obtained from the Research Ethics Committee for Human Subjects, Research and Development Institute, Ubon Ratchathani Rajabhat University (Protocol No. 004/2567, dated March 29, 2024). The study was conducted in accordance with the Declaration of Helsinki and Good Clinical Practice guidelines.

All participants provided voluntary written informed consent after receiving detailed information about the purpose of the study, procedures, potential risks and benefits, confidentiality measures, and their right to withdraw at any time without penalty. Participant confidentiality and anonymity were maintained through de-identification of all data, secure storage of completed questionnaires in locked cabinets, and password-protected electronic databases accessible only to authorized research team members. No individual identifying information was included in data analysis or reporting.

Results

Characteristics of study participants

The study collected data from 480 postpartum mothers, achieving a 100% response rate. Participants ranged in age from 18 to 42 years, with a mean age of 28.5 ± 5.2 years. All participants were female, in accordance with the inclusion criteria. The majority were aged 25 to 35 years (n = 329, 68.5%), had secondary education (n = 251, 52.3%), worked in agriculture (n = 220, 45.8%), had family incomes between 15,000 and 25,000 baht per month (n = 186, 38.7%), and delivered vaginally (n = 298, 62.1%).

Regarding birthing experience, 343 (71.4%) were primiparous, and 137 (28.6%) were multiparous.

Health problems among postpartum mothers

Assessment of postpartum maternal health problems used a 5-point scale (0 to 4). Interpretation criteria were: 0.01 to 1.33 = low, 1.34 to 2.67 = moderate, and 2.68 to 4.00 = high.

Table 1. Health problems among postpartum mothers across three dimensions (n = 480)

Health Problem Dimension	Mean ± SD	Level	Rank
Adaptation problems	2.25 ± 0.74	Moderate	1
Physical problems	2.08 ± 0.67	Moderate	2
Psychological-emotional problems	2.05 ± 0.81	Moderate	3
Overall health problems	2.13 ± 0.74	Moderate	-

Note: Statistical analysis used descriptive statistics

Postpartum mothers reported moderate-level health problems across all three dimensions (Mean = 2.13 ± 0.74). Detailed analysis revealed that "dependency on others during early postpartum" emerged as the most severe issue (2.82 ± 1.15), representing the only problem reaching a "high" level. Within adaptation problems, managing daily routines ranked second (2.35 ± 0.98), followed by coping with role changes (2.28 ± 0.87). Physical problems were led by easy fatigue (2.28 ± 0.95) and back pain (2.15 ± 0.89). Psychological-emotional problems were dominated by a lack of confidence in childcare (2.28 ± 0.95) and mental anxiety (2.19 ± 1.08).

Traditional Thai medicine preferences

TTM methods were categorized into two groups based on theoretical principles: heat and herbal therapy methods (7 practices) and physical therapy methods (4 practices).

Table 2. Traditional Thai medicine preferences among postpartum mothers (n = 480)

Rank	Traditional Thai Medicine Method	Mean ± SD	Level	Category
1	Warm water and herbal beverages	2.43 ± 0.98	Moderate	Heat therapy
2	Yu Fai (fire therapy)	2.35 ± 1.05	Moderate	Heat therapy
3	Herbal compress	2.28 ± 0.92	Moderate	Heat therapy
4	Traditional Thai massage	2.25 ± 0.89	Moderate	Heat therapy
5	Herbal water bathing	2.18 ± 0.87	Moderate	Heat therapy
6	Abdominal binding	2.15 ± 0.85	Moderate	Physical therapy
7	Herbal steam therapy	2.08 ± 0.83	Moderate	Heat therapy
8	Abdominal steaming	2.05 ± 0.82	Moderate	Physical therapy
9	Hermit stretching exercises	1.98 ± 0.78	Moderate	Physical therapy
10	Salt pot pressing	1.85 ± 0.75	Moderate	Physical therapy
11	Charcoal sitting	1.72 ± 0.68	Moderate	Heat therapy
	Overall, Traditional Thai Medicine preferences	2.18 ± 0.65	Moderate	-

Note: Statistical analysis used descriptive statistics

Overall, TTM preferences were at a moderate level (2.18 ± 0.65). "Warm water and herbal beverages" showed the highest preference (2.43 ± 0.98), reflecting the acceptance of "heat" restoration principles. "Charcoal sitting" showed the lowest preference (1.72 ± 0.68). Comparison between categories revealed that heat and herbal therapy methods were associated with significantly higher preference levels compared to physical therapy approaches (2.22 ± 0.89 vs 2.01 ± 0.81, p = 0.015) with a small effect size (Cohen's d = 0.24).

Factors associated with health problems and TTM preferences

Table 3. Comparison of health problems and TTM Preferences by Parity (*n* = 480)

Variable	Primiparous (n = 343)	Multiparous (n = 137)	*t-value*	*p-value*	Cohen's *d*
Overall health problems	2.18 ± 0.72	2.01 ± 0.79	2.15	0.032	0.23
- Adaptation problems	2.31 ± 0.71	2.08 ± 0.78	2.89	0.004	0.31
- Physical problems	2.12 ± 0.65	1.98 ± 0.71	1.94	0.053	0.21
- Psychological-emotional problems	2.11 ± 0.83	1.89 ± 0.75	2.56	0.011	0.28
Overall Traditional Thai Medicine preferences	2.24 ± 0.63	2.05 ± 0.69	2.76	0.006	0.29

Note: Statistical analysis used an independent t-test

Independent t-test results indicated that parity status was significantly associated with both health problems and TTM preferences. Primiparous mothers reported significantly higher levels of overall health problems (2.18 ± 0.72 vs 2.01 ± 0.79, p = 0.032) and stronger TTM preferences (2.24 ± 0.63 vs 2.05 ± 0.69, p = 0.006) than multiparous mothers. Regarding education, mothers with secondary education showed significantly higher preferences for Yu Fai therapy (p = 0.028) and abdominal binding (p = 0.038) compared to those with higher education.

Table 4. Correlations between health problems and traditional Thai medicine preferences (n = 480)

Health Problems	Overall Traditional Thai Medicine Preferences	Heat and Herbal Methods	Physical Therapy Methods
Overall health problems	0.42**	0.38**	0.31**
Adaptation problems	0.45**	0.41**	0.28**
Physical problems	0.38**	0.35**	0.35**
Psychological-emotional problems	0.35**	0.31**	0.29**

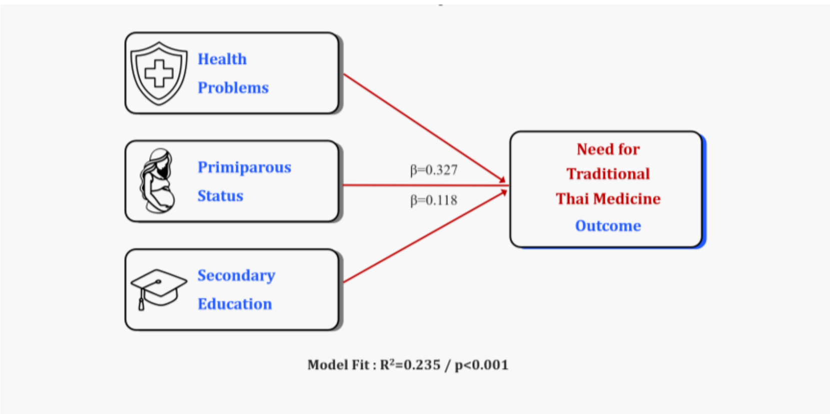
*Note: *p < 0.01; Statistical analysis used Pearson correlation coefficients

Correlation analysis revealed significant positive relationships between health problems and TTM preferences (r = 0.42, p < 0.01). Adaptation problems showed the strongest association with overall preferences (r = 0.45). Conversely, age, family income, and delivery type showed no significant association with TTM preferences (p > 0.05).

Regression model of factors associated with TTM preferences

Multiple regression analysis identified three significant associated factors, which together were related to 23.5% of the variance in TTM preferences ($R^2 = 0.235$, $F = 36.47$, $p < 0.001$): overall health problems ($\beta = 0.327$, $p < 0.001$), parity status ($\beta = 0.118$, $p = 0.022$), and educational level ($\beta = 0.105$, $p = 0.028$).

Figure 2. Regression Model of factors associated with TTM preferences



The model demonstrates that health problems showed the strongest association with TTM preferences ($\beta = 0.327$), followed by primiparous status and secondary education level. Demographic factors such as age, income, and delivery type did not substantially relate to traditional care preferences in this population.

Discussion

The present findings establish a substantive empirical connection between traditional postpartum care practices and the contemporary framework of therapeutic physical activity. Anchored in Rubin's (1984) Postpartum Adaptation Theory as the primary interpretive lens, this discussion examines how postpartum mothers in northeastern Thailand navigate recovery through culturally embedded physical practices that facilitate the transition from dependency to functional autonomy. The interpretation is further informed by Health Behavior Theory and the four-element balance principles of Traditional Thai Medicine (TTM), which serve as complementary frameworks for understanding maternal care-seeking patterns and the therapeutic mechanisms underlying traditional postpartum modalities.

Maternal Adaptation as the Primary Postpartum Challenge

Postpartum mothers in this study reported moderate overall health problems (2.13 ± 0.74), with adaptation problems ranking highest (2.25 ± 0.74), followed by physical (2.08 ± 0.67) and psychological-emotional problems (2.05 ± 0.81). The predominance of adaptation challenges over somatic symptoms is consistent with the global postpartum health patterns documented by Wang et al. (2021) and specifically corroborates Roomruangwong et al. (2016), who reported that psychosocial adjustment difficulties and maternal role transition burdens frequently outweigh physical symptoms among Thai women. Zhang et al. (2025), examining postpartum experiences in Chinese maternity care centers, similarly identified collaborative health management and relational support as central pillars of recovery, reinforcing the notion that adaptation challenges are deeply embedded in sociocultural care structures rather than being exclusively individual-level phenomena.

A critical finding is that functional dependency on others was the only individual stressor to reach a high severity level (2.82 ± 1.15). This provides strong empirical validation for Rubin's (1984) taking-in phase, during which mothers exhibit passive and dependent behavior as they process the birth experience and physical exhaustion, before transitioning to the taking-hold phase characterized by increasing self-care and infant caregiving autonomy (Bell et al., 2016). This developmental trajectory has been corroborated in Southeast Asian contexts: Bawafi et al. (2024) found that family support was significantly associated with the letting-go phase of psychological adaptation in Indonesian primiparous mothers, while Afriana et al. (2023) demonstrated that both parity and family support were related to the sequential progression through all three of Rubin's phases. Ariani et al. (2022) further reported that husband support was positively associated with psychological adaptation among Balinese postpartum women, confirming the centrality of interpersonal support in facilitating maternal transitions across the region.

Although Hong and Buntup (2023) reported a postpartum depression rate of 74.1% across ASEAN countries, the moderate severity levels in the present study suggest a protective effect inherent in the traditional extended family structures prevalent in northeastern Thailand. This interpretation is consistent with evidence that robust informal social support networks serve as a buffer against severe psychological distress (Kim et al., 2023; Gelaye et al., 2016). Systematic reviews have confirmed this relationship across Asian populations: Low et al. (2023) documented that emotional support significantly reduces postpartum depression, while Cho et al. (2021) reported in a Korean national-level study that low social support was associated with nearly three times the odds of developing postpartum depression. He et al. (2025) further demonstrated that social support relates positively to maternal affect levels, particularly during the first six months postpartum, a period they characterized as a critical window for psychosocial intervention that precisely corresponds to the recruitment timeframe of the present study. Khademi and Kaveh (2024), in a systematic review proposing a logic framework for postpartum social support, conceptualized childbirth and motherhood as stressful life events and social support as a coping resource that facilitates self-regulation, a framework directly consistent with the need-driven model identified here.

However, it is important to acknowledge that the relationship between traditional support structures and maternal well-being is not uniformly protective. Withers et al. (2018), in a comprehensive review of traditional beliefs and practices across Asian countries, observed that while postpartum confinement, heat restoration, massage, and herbal medicine are widely practiced and often beneficial, these practices can function as a "double-edged sword" when embedded within rigid kinship hierarchies-for instance, when mother-in-law authority constrains maternal autonomy or strict behavioral prescriptions increase psychological distress (Ekpenyong & Munshitha, 2023). The present study's focus on maternal preferences rather than imposed practices may partially account for the predominantly positive associations observed, as women who actively choose traditional care likely experience greater perceived control and satisfaction compared to those for whom such practices are externally mandated.

TTM as Cultural Therapeutic Physical Activity for Functional Recovery

Maternal preferences for TTM were at a moderate level (2.18 ± 0.65), with a distinct hierarchy favoring heat-based interventions. Warm water and herbal beverages (2.43 ± 0.98) and Yu Fai therapy (2.35 ± 1.05) ranked highest, while charcoal sitting showed the lowest preference (1.72 ± 0.68). This preference pattern reflects the heat-restoration principles inherent in Southeast Asian postpartum care traditions, where thermal regulation is viewed as a primary physiological recovery mechanism (Dennis et al., 2007; Arnida et al., 2022; Ridzuan et al., 2021). Withers et al. (2018) documented that across 45 postpartum-related studies in Asia, the cultural perception of postpartum women as vulnerable to cold-related illness drives widespread practices including heat application, herbal therapies, and traditional massage-all of which correspond directly to the TTM modalities examined here.

Heat and herbal therapy methods showed significantly higher preference than physical therapy approaches (2.22 ± 0.89 vs. 2.01 ± 0.81; $p = .015$, Cohen's $d = 0.24$), providing empirical support for the TTM theoretical foundation of four-element balance restoration (Dennis et al., 2007). Critically, these TTM modalities—including traditional Thai massage, hermit stretching exercises (Ruesi Dat Ton), abdominal binding, and herbal compress therapy—can be reconceptualized as culturally grounded forms of therapeutic physical activity that address functional recovery through structured body-based engagement. Unlike Western biomedical models that emphasize isolated mechanical rehabilitation, TTM integrates thermal homeostasis with manual physical interventions in a holistic recovery system (Arias-García et al., 2022). This reconceptualization is supported by empirical evidence: Promsrisuk et al. (2024) demonstrated that traditional Thai body-movement practices produce measurable improvements in respiratory function and body posture, while Castro et al. (2024) confirmed in a systematic review that structured physical activity during pregnancy and postpartum significantly benefits maternal strength, cardiovascular endurance, balance, and flexibility-domains also addressed by TTM modalities. The clinical efficacy of specific TTM components has been further validated by Dhippayom et al. (2015) for herbal compress therapy and by Ketsuwan et al. (2018) for breast engorgement relief.

By addressing somatic symptoms through culturally embedded physical engagement, TTM facilitates the transition from Rubin's taking-in to taking-hold phase, assisting mothers in regaining the functional autonomy required for infant caregiving. Curren et al. (2022) identified "making room"-the process of creating physical, psychological, and relational space for the new maternal identity-as a central mechanism of postpartum adjustment; TTM practices may serve an analogous function by providing structured recovery routines that demarcate healing time, facilitate bodily awareness, and restore physical agency. Candia Henríquez et al. (2023) emphasized that the gestational and postpartum periods constitute critical windows during which physical activity interventions-whether conventional or culturally traditional-can substantially influence maternal adaptation outcomes, reinforcing the imperative of integrating evidence-based traditional practices into contemporary maternal care frameworks. The effectiveness of culturally responsive interventions is further demonstrated by Alfayumi-Zeadna et al. (2025), who reported that a culturally adapted peer support program reduced postpartum depression rates from 45% to 19.8% over one year among Bedouin women, underscoring the therapeutic potential of programs that honor cultural health beliefs while delivering evidence-based outcomes.

Factors Associated with Preferences for TTM

Multiple regression analysis identified three factors significantly associated with TTM preferences, which together were related to 23.5% of the variance ($R^2 = .235$, $F(3, 476) = 36.47$, $p < .001$). This proportion of explained variance is consistent with psychosocial and health behavior research, where R^2 values between 15% and 30% are typical, given the multifactorial nature of care-seeking decisions shaped by cultural beliefs, family dynamics, perceived efficacy, and accessibility (Khademi & Kaveh, 2024). The remaining 76.5% of unexplained variance likely reflects unmeasured variables, including familial attitudes toward TTM, previous personal experiences with traditional medicine, geographic accessibility to TTM services, perceived quality of the provider-patient relationship, maternal self-efficacy in managing postpartum recovery, and community-level cultural norms. Future research should incorporate these variables through longitudinal and mixed-methods designs to develop more comprehensive models of traditional care-seeking behavior.

Overall health problems showed the strongest association with TTM preferences ($\beta = .327$, $p < .001$), indicating that TTM engagement is need-driven rather than merely culturally automatic. This finding is consistent with the stress–coping framework (Khademi & Kaveh, 2024), which posits that postpartum distress drives active pursuit of coping resources, and is supported by evidence that the intensity of health challenges is positively associated with help-seeking behavior across diverse contexts (Sharma et al., 2025; Gebrekristos et al., 2025). Notably, no study in the reviewed literature reported that greater symptom severity reduces engagement with traditional care modalities, reinforcing the adaptive rather than habitual nature of TTM utilization.

Parity status was significantly associated with TTM preferences ($\beta = .118$, $p = .022$), with primiparous mothers reporting higher preferences than multiparous mothers (2.24 ± 0.63 vs. 2.05 ± 0.69; $p = .006$). This disparity aligns with Shorey et al. (2018), who demonstrated higher support needs among first-time mothers, and is corroborated by Bawafi et al. (2024) and Afriana et al. (2023), who confirmed that primiparity was significantly associated with greater need for family support across all phases of postpartum psychological adaptation in Indonesian populations. First-time mothers face a steeper learning curve and a more intensive taking-hold process (Bell et al., 2016), and may orient more strongly toward TTM practices that provide structured guidance and cultural validation for navigating unfamiliar recovery demands (Castro et al., 2024).

Educational attainment showed a significant inverse association ($\beta = .105$, $p = .028$), with secondary-educated mothers demonstrating higher preferences for Yu Fai therapy and abdominal binding compared to tertiary-educated mothers. This pattern is consistent with global trends linking higher education with greater biomedical acceptance (Gelaye et al., 2016; Sirichai et al., 2025). However, this relationship is nuanced: Kim et al. (2023) found that in Thailand, higher education was associated with greater utilization of online support resources but not with the abandonment of traditional support systems, suggesting that education may diversify rather than replace care-seeking strategies. Withers et al. (2018)

similarly observed that educational attainment modulates but does not eliminate engagement with traditional postpartum practices across Asian settings, highlighting the enduring cultural significance of these modalities even among more educated populations. This nuanced understanding has important clinical implications: rather than assuming that educated mothers will reject TTM, healthcare providers should recognize that educational attainment may influence the specific methods preferred and the channels through which mothers access information about traditional care.

Practical Implications for Integrated Postpartum Care

These findings yield three concrete implications for clinical practice and policy. First, healthcare providers should implement postpartum screening protocols that identify primiparous mothers with elevated adaptation problems for targeted referral to integrated TTM-biomedical services. Given the strong need-driven association, screening for health problem severity, particularly adaptation difficulties and functional dependency, can guide the prioritization of heat-based therapies (Yu Fai, herbal beverages, herbal compress) that demonstrated the highest maternal preference and align with established clinical evidence (Dhippayom et al., 2015; Ketsuwan et al., 2018). Second, professional training curricula for maternal-child health providers should incorporate competencies in TTM assessment and referral, recognizing that practices such as traditional Thai massage, hermit stretching exercises, and herbal compress therapy constitute validated forms of therapeutic physical activity that facilitate postpartum functional recovery (Peltzer & Pengpid, 2019). Structured training programs should equip providers with the knowledge to differentiate evidence-based TTM practices from those lacking empirical support, thereby ensuring safe and effective integration. Third, public health policy should position TTM as a complementary component of formal postpartum care, with delivery differentiated by education level and parity to maximize responsiveness to the populations demonstrating the strongest orientation toward traditional practices. Expanding health insurance coverage for evidence-based TTM modalities and establishing certification systems for TTM practitioners in maternal care settings would further advance the integration of culturally grounded physical activity into contemporary obstetric protocols (Dennaoui et al., 2024).

Limitations and Future Directions

Several limitations warrant acknowledgment. The cross-sectional design precludes causal inferences; all reported relationships are associative, and the use of terms such as “associated factor” reflects this methodological constraint. The R^2 of 23.5%, while consistent with psychosocial research norms, indicates substantial unexplained variance attributable to unmeasured sociocultural variables, including familial attitudes, prior TTM experiences, perceived provider quality, community norms, and maternal self-efficacy, which future longitudinal research should systematically incorporate. Data collection was limited to Ubon Ratchathani Province, which may limit generalizability to other Thai regions with differing healthcare infrastructure, cultural practices, and socioeconomic conditions. Additionally, the assessment of preferences rather than actual utilization behavior means that the findings reflect intended rather than enacted care-seeking patterns. Future research should employ longitudinal designs to track how TTM preferences translate into utilization behavior over time, randomized trials to evaluate the clinical outcomes of integrated TTM-biomedical postpartum care models, and mixed-methods approaches to capture the subjective meanings mothers ascribe to traditional practices within the broader ecology of postpartum recovery.

Conclusions

This study concludes that postpartum mothers in northeastern Thailand navigate recovery through a complex interplay of physical challenges and cultural adaptation, with functional dependency on others confirmed as the most acute stressor, consistent with Rubin’s (1984) taking-in phase of maternal transition. Traditional Thai Medicine (TTM) preferences were predominantly oriented toward heat-restoration modalities, reflecting the culturally embedded pursuit of physiological homeostasis through practices that function as therapeutic physical activity. Health problem severity, primiparous status, and secondary educational attainment were the factors most strongly associated with TTM preferences, indicating that engagement with traditional care is a need-driven adaptive response rather than a culturally automatic behavior. Healthcare providers should integrate evidence-based TTM, particularly heat-based therapies such as Yu Fai, herbal compress, and traditional massage, as a culturally responsive component of formal postpartum care, with screening protocols targeting mothers who demonstrate the highest adaptation difficulties. The cross-sectional design limits all findings to associative relationships, and the substantial proportion of unexplained variance suggests that future longitudinal and mixed-methods research should examine unmeasured sociocultural factors, including familial attitudes, prior TTM experiences, and community support structures, to further refine integrated care models for comprehensive maternal well-being.

Recommendations

1. Clinical Integration: Healthcare providers should incorporate TTM as a culturally responsive component of formal postpartum care to support the "taking-hold" process and enhance maternal well-being.
2. Public Health Policy: National health policies should recognize TTM as a legitimate form of therapeutic physical activity, particularly targeting primiparous mothers who demonstrate the highest need for adaptive support.
3. Future Research: Longitudinal investigations are recommended to evaluate the causal impact of TTM on long-term functional health and the sustainability of maternal well-being across diverse demographic groups.

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