

School adjustment of ethnic minority students in Chiang Rai, Thailand

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Received: 5 December 2024 **Revised:** 23 February 2025 **Accepted:** 28 March 2025 **Available online:** January 2026

DOI: 10.55131/jphd/2026/240105

ABSTRACT

This study investigates the school adjustment of ethnic minority students in Chiang Rai, Thailand, focusing on three dimensions: social engagement, academic achievement, and psychological well-being. Using Bronfenbrenner's ecological systems theory, this study shows how both individual and wider social factors affect how ethnic minority students adjust to school. Employing a cross-sectional survey design, data were collected from 404 students in three districts: Chiang Saen, Chiang Khong, and Wiang Kaen. The participants were drawn from diverse ethnic groups, including Hmong, Tai Yai, Lahu, Akha, and others. The findings indicated that 56.2% of the students demonstrated moderate levels of school adjustment, while 43.8% showed good adjustment. Among the dimensions, academic achievement scored the highest, followed by social engagement, with psychological well-being rated as the lowest. The study identified school stress and academic management as significant predictors of school adjustment, collectively accounting for 29.3% of the variance. School stress emerged as the strongest predictor, highlighting its critical impact on students' ability to adapt to the school environment. The findings provide useful guidance for policymakers, educators, and other stakeholders in developing interventions that respond to the unique challenges experienced by ethnic minority students. Such initiatives should aim to create a more inclusive and supportive educational environment that promotes social integration, academic success, and psychological well-being.

Keywords:

School adjustment; Ethnic minority students; School stress; Academic management

Citation:

Rattanaporn Arsa, Natthani Meemon, Aungsumalee Pholpark, Pateeeya Kitcharoen. School adjustment of ethnic minority students in Chiang Rai, Thailand. *J Public Hlth Dev.* 2026;24(1):59-71 (<https://doi.org/10.55131/jphd/2026/240105>)

INTRODUCTION

The school environment plays a pivotal role in shaping the academic success, social development, and overall well-being of students.^{1, 2} For ethnic minority students in Thailand, the process of school adjustment is intricately linked to their cultural background, language, and social integration.³ These students often encounter multiple challenges as they navigate an educational system that may not fully recognize or accommodate their unique needs and identities. The difficulties they face are compounded when systemic barriers such as language differences, cultural misunderstandings, and social exclusion hinder their ability to thrive academically and socially.⁴⁻⁶

In northern Thailand, particularly Chiang Rai, ethnic minority students come from a range of diverse backgrounds, including the Akha, Lahu, Hmong, and Karen communities. These students are tasked with adapting not only to the dominant national culture but also to the intersection of various ethnic and cultural identities.⁷ Furthermore, many of these students belong to stateless communities, which exacerbates their vulnerability and marginalization, creating additional barriers to effective school adjustment. As a result, they often struggle with language acquisition, understanding school norms, and integrating socially within the classroom.^{8, 9}

School adjustment refers to how well students adapt emotionally, cognitively, and behaviorally to the school environment, allowing them to function effectively and experience a sense of wellbeing and fulfillment in their daily school life.¹⁰⁻¹² Although this concept has been defined and measured in different dimensions, the main components consistently conceptualized in previous

literatures consists of social engagement, academic achievement, and psychological wellbeing. While the concept has been defined and measured in various ways, prior studies consistently identify three key dimensions: academic achievement, social engagement, and psychological wellbeing. These dimensions capture the multifaceted nature of school adjustment, encompassing not only students' performance but also their interpersonal relationships and emotional state within the school context.¹⁰⁻¹⁴ For ethnic minority students, school adjustment is often hindered by systemic barriers such as cultural insensitivity, social exclusion, and an education system that overlooks their cultural and linguistic needs. These challenges lead to negative outcomes, including low academic motivation, social isolation, and an increased risk of disengagement or dropping out.^{15, 16}

This study aims to explore how ethnic minority students in Chiang Rai adjust to school—overall and across academic, social, and psychological domains—while examining how various environmental factors influence this adjustment. Drawing on Bronfenbrenner's ecological systems theory, the study considers the interactions between students and the multiple layers of their social environment that shape their school experiences. The social ecology, particularly at the microsystem, mesosystem, and macrosystem reflect students' immediate environments and their broader institutional context, which may influence school adjustment. This study constitutes one of the few scholarly efforts to apply Bronfenbrenner's ecological systems theory to the examination of school adjustment. In contrast to previous research that tends to analyze demographic or schooling-related variables in isolation, this study adopts a student-centered lens, emphasizing the dynamic interplay

between students and their environmental contexts, as well as the interrelated influences of individuals within their immediate social ecosystems.

MATERIALS AND METHODS

Study Design and Data Collection

This cross-sectional survey study was conducted in six secondary schools across three districts in Chiang Rai Province: Chiang Saen, Chiang Khong, and Wiang Kaen. These districts were chosen due to their high concentration of ethnic minority populations. The six schools were identified using snowball sampling, with school principals recommending schools known for their ethnic diversity. Participants included all ethnic minority students in Grades 7 to 9 who were present on the day of data collection and had received parental consent. A total of 404 students participated in the study. The sample comprised students aged 12 to 14 from various ethnic groups, including Akha, Lahu, Shan, Hmong, Yao, and Lisu. Both Thai citizens and stateless individuals with basic Thai literacy were included.

Data were collected using a self-administered questionnaire, which was pilot tested beforehand to ensure clarity and appropriateness for the target population. The pilot results confirmed that students were able to read, understand, and respond to the questions independently.

Ethical approval was obtained from the Research Ethics Committee, Faculty of Social Sciences and Humanities, Mahidol University (Approval No. 2024/034.2902). Participation was voluntary, with informed consent provided by students and guardians.

Research Instruments

Data were collected using a structured 94-item questionnaire divided

into four sections. The first section gathered demographic information, including gender, age, nationality, GPA, living conditions, and family background. The second section (26 items) assessed interpersonal relationships with peers, family, teachers, and the school community. The third section (36 items) evaluated the school environment, focusing on management, teaching practices, social support, and academic stress. The final section (23 items) measured school adjustment across three dimensions: social engagement (adapted from Veiga et al., 2014)¹⁹, academic achievement (adapted from Janchuen, 2014, and Jaimuk, 2011)^{20, 21}, and psychological well-being (adapted from the PHQ-A, 2018)²². Responses were rated on a 5-point Likert scale (1–5), with total scores ranging from 23 to 115. Higher scores indicated better adjustment. I realized that I wrote the author's name incorrectly and were categorized into high (above 64), moderate (32–63), and low (31 or below).

Dependent Variable

The dependent variable in this study was school adjustment, conceptualized as a multidimensional construct comprising three domains: social engagement (7 items)¹⁹, academic achievement (7 items)^{20, 21}, and psychological wellbeing (9 items)²². These domains were adapted from established instruments.

For the psychological wellbeing domain, which was assessed using the PHQ-A, higher scores reflect greater depressive symptoms and thus lower wellbeing. To align the direction of this domain with the other two (where higher scores indicate better adjustment), the psychological wellbeing scores were reverse-coded prior to calculating the overall school adjustment score.

An overall school adjustment score was then computed by combining the standardized scores from all three domains.

Higher total scores reflected better overall adjustment. For interpretation, total scores were further classified into high (above 64), moderate (32–63), and low (31 or below) levels of school adjustment. The reliability of the measurement was assessed using Cronbach's alpha (α) to examine internal consistency. The results showed satisfactory reliability for both the overall school adjustment scale and each of the three domains, with alpha values ranging from $\alpha = 0.745$ to $\alpha = 0.777$.

Independent Variables

Guided by Bronfenbrenner's ecological systems theory, the independent variables in this study were selected to reflect key factors at the microsystem, mesosystem, and macrosystem. All items were developed or adapted based on prior literature^{10, 12, 14} to ensure content validity and contextual relevance for the study population.

Microsystem-level factors represent students' direct and immediate relationships with peers (6 items), family (5 items), and teacher (5 items). *Mesosystem-level factors* represent the interaction between students' microsystems, particularly parent-teacher relationships (3 items) and parent-school relationships (4 items). *Macrosystem-level factors* represent broader institutional and cultural aspects of the school environment, including school environment (12 items), school administration (5 items), academic management (5 items), and social support at school (5 items).

Each item was rated on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). Domain scores were calculated separately, and each was standardized to a 0-100 scale, with higher scores indicating more favorable perceptions or stronger relationships. This standardization enabled meaningful comparison across domains with differing item counts. The reliability of the measurement was assessed using Cronbach's alpha (α) to examine internal

consistency. The results showed satisfactory reliability for all variables, with alpha values ranging from $\alpha = 0.736$ to $\alpha = 0.843$.

Statistical Analysis

Data were analyzed using both descriptive and inferential statistical methods. Descriptive statistics—including frequencies, percentages, means, and standard deviations—were used to summarize the demographic characteristics of the participants and the distribution of key study variables.

To examine the factors associated with school adjustment, stepwise multiple linear regression (MLR) analysis was conducted. This approach allowed for the identification of the most significant predictors by sequentially including or excluding independent variables based on their statistical contribution to the model. All analyses were performed using [insert statistical software, e.g., SPSS version 20], with a significance level set at $p < 0.05$.

RESULTS

Characteristics of the Study Sample

The study included 404 ethnic minority students, predominantly female (55.4%), with an average age of 14.39 years ($SD = 1.168$). Most participants (99.5%) were Thai nationals, and the largest ethnic group was Hmong (47.0%). Students were primarily in Grade 8 (41.6%), followed by Grades 9 (32.4%) and 7 (26.0%). The most common GPA range was 2.51–3.00 (27.2%). In terms of living arrangements, 81.4% resided with parents or siblings, and 11.9% lived with grandparents. The average daily allowance for school expenses was 30.83 Baht ($SD = 17.388$). Most students (77.2%) lived with both parents, though 15.8% had separated parents. Parental education was low, with 36.2% of fathers and 45.6% of mothers having no formal education. Farming was the predominant occupation (60.7%), followed by general labor (25.0%).

The mean academic stress score was 21.96 (SD = 5.713). The most common stressor was being compared to higher-achieving peers, while the least reported was social

withdrawal due to academic pressure. A detailed socio-demographic summary is provided in Table 1.

Table 1 Characteristics of the study samples (n = 404)

Items	n (%)	Items	n (%)
Gender		Daily Income (Baht)	
Female	224 (55.4)	≤ 10	40 (9.9)
Male	180 (44.6)	11–20	160 (39.5)
Age (Years)		21–30	60 (14.9)
12–14	229 (56.7)	31–40	65 (16.1)
≥15	175 (43.3)	41–50	59 (14.6)
Min = 12, Max = 19, Mean = 14.39, S.D. = 1.168		More than 50 Baht	20 (5.0)
Nationality		Min = 5, Max = 120, Mean = 30.83, S.D. = 17.388	
Thai	402 (99.5)	Parental Occupation	
Burmese	2 (0.5)	Farmer	245 (60.7)
Education Level		General laborer	101 (25.0)
Grade 7	131 (32.4)	Merchant	31 (7.7)
Grade 8	168 (41.6)	Company employee	19 (4.7)
Grade 9	105 (26.0)	Government employee	8 (1.9)
Grade Point Average (GPA)		Father's Education Level	
Below 2.00	48 (11.9)	No formal education	146 (36.2)
2.00–2.50	82 (20.3)	Primary education	123 (30.4)
2.51–3.00	110 (27.2)	Lower secondary education	75 (18.6)
3.01–3.50	107 (26.5)	Upper secondary education	36 (8.9)
3.51–4.00	57 (14.1)	Vocational certificate (Voc.)	12 (3.0)
Ethnicity		Higher vocational diploma	5 (1.2)
Hmong	190 (47.0)	Bachelor's degree or higher	7 (1.7)
Tai Yai	53 (13.1)	Mother's Education Level	
Lahu	47 (11.6)	No formal education	184 (45.6)
Mien	31 (7.7)	Primary education	115 (28.5)
Chinese	27 (6.7)	Lower secondary education	57 (14.1)
Akha	14 (3.5)	Upper secondary education	36 (8.9)
Tai Lue	12 (3.0)	Vocational certificate (Voc.)	3 (0.7)
Musoe (Lisu)	9 (2.2)	Higher vocational diploma	4 (1.0)
Lua	8 (2.0)	Bachelor's degree or higher	5 (1.2)
Khmu	7 (1.7)	Family Status	
Haw Chinese	6 (1.5)	Parents living together	312 (77.2)
Living Situation		Parents separated	64 (15.8)
With parents/siblings	329 (81.4)	Father deceased	14 (3.5)
With grandparents	48 (11.9)	Mother deceased	12 (3.0)
With relatives	17 (4.2)	Both parents deceased	2 (0.5)
With friends	6 (1.5)	School Stress	
Orphanage	4 (1.0)	Min = 8, Max = 39, Mean = 21.96, S.D. = 5.713	

Factors from Microsystem to Macrosystem

Microsystem factors, including relationships with peers, family, and

teachers, revealed that students had the strongest connections with family (69.99 ± 16.203). At the mesosystem level, relationships between parents and schools

were rated higher (65.98 ± 17.831) than those between parents and teachers. Macrosystem factors, encompassing school environment, management, teaching practices, and social support, showed the highest ratings for social support ($67.19 \pm$

14.733). These findings underscore the critical role of family ties, interpersonal relationships, and social support in aiding ethnic minority students' school adjustment (Table 2).

Table 2 Descriptive statistics of factors from microsystem to macrosystem

Factor	N of item	Min	Max	Mean	S.D.
Microsystem					
Relationship between students and peers	6	26.7	96.7	67.07	12.675
Relationship between students and family	5	28.0	100.0	69.99	16.203
Relationship between students and teachers	5	20.0	100.0	64.62	17.197
Mesosystem					
Relationship between parents and teachers	3	20.0	100.0	60.92	17.723
Relationship between parents and school	4	20.0	100.0	65.98	17.831
Macrosystem					
School environment	10	28.0	100.0	64.05	12.110
School administration	5	28.0	100.0	64.38	12.419
Academic management	5	36.0	100.0	65.82	13.343
Social support	5	20.0	100.0	67.19	14.733

Note: Full score = 100 (Percentage score)

School Adjustment of Ethnic Minority Students

The school adjustment of ethnic minority students was assessed in three domains: social engagement, academic achievement, and psychological well-being. Scores ranged from 36.4 to 89.1, with an average of 57.08 ± 9.241 . Most students (56.2%) demonstrated moderate adjustment, while 43.8% exhibited high

adjustment. Domain-specific analysis showed the highest average score in academic achievement (63.87), followed by social engagement (54.06) and psychological well-being (53.82). These results highlight academic success as a strength, while social and emotional dimensions showed room for improvement. Detailed findings are summarized in Table 3.

Table 3 Percentage of overall and school adjustment levels and dimensions

School Adjustment	Percentage			Scores ¹		
	High	Moderate	Low	Min	Max	Mean±S.D.
Overall, School Adjustment	43.8	56.2	0.0	36.4	89.1	57.08±9.241
Dimensions of School Adjustment						
- Academic Achievement	36.1	53.0	10.9	20.0	100.0	63.87±13.131
- Social Engagement	32.9	61.7	5.4	26.7	96.7	54.06±12.023
- Psychological Well-being	14.9	68.1	17.1	20.0	100.0	53.82±16.345

¹ The full score is 100 points (percentage score).

Predictors of School Adjustment Among Ethnic Minority Students

The predictors of school adjustment among ethnic minority students were identified using stepwise multiple

regression analysis. The independent variables considered in this analysis included relationships between students and peers, relationships between students and teachers, relationships between parents

and the school, relationships between parents and teachers, school environment, school administration, teaching management, social support, school stress, and school adjustment. To assess multicollinearity among the independent variables, Pearson's correlation coefficients were analyzed, yielding values ranging from 0.009 to 0.604. These low to moderate correlations indicated that multicollinearity was not a concern. This was further confirmed by Variance Inflation Factor (VIF) values ranging from 1.000 to 1.605 and tolerance values greater than 0.2.

The regression analysis results indicated that school stress (x_1) and teaching management (x_2) were significant predictors of school adjustment among ethnic minority students in Chiang Rai ($p <$

0.001). Together, these variables explained 29.3% of the variance in school adjustment. School stress emerged as the strongest predictor. The predictive equation for school adjustment can be expressed as follows:

$$y = 32.697 + 0.882 (x_1) + 0.652 (x_2)$$

This equation suggests that when school stress (x_1) is held constant, an increase of one point in teaching management (x_2) leads to an increase of 0.652 points in school adjustment. Conversely, when teaching management (x_2) is held constant, an increase of one point in school stress (x_1) results in an increase of 0.882 points in school adjustment. These findings are detailed in Table 4.

Table 4 Stepwise multiple regression analysis of school adjustment

Variables	B	S.E.	Beta	t	p	Tolerance	VIF
School Stress	0.882	0.075	0.496	11.828	<0.001	0.999	1.001
Academic Management	0.652	0.128	0.214	5.109	<0.001	0.999	1.001
Constant	32.697	2.667					
$R^2 = 0.296$, Adjusted $R^2 = 0.293$, $F = 84.464$ ($p < 0.001$), Durbin-Watson = 1.920							

DISCUSSION

The findings of this study on school adjustment among ethnic minority students, assessed across three dimensions—social engagement, academic achievement, and psychological well-being—revealed that overall adjustment was at a moderate level for 56.2% of the students and a good level for 43.8%. These results indicate that ethnic minority students continue to face significant challenges in adapting to school, particularly in the areas of social engagement and psychological well-being. This aligns with the study by Graham et al. (2022), which found that ethnic minority students encounter greater difficulties in integrating into the social environment of

schools compared to other student groups. Cultural and linguistic differences often contribute to feelings of isolation and difficulties in forming social relationships.²³ Similarly, Strayhorn (2021) noted that ethnic minority students frequently experience school adjustment challenges, especially in social and psychological dimensions, due to feelings of insecurity in unfamiliar environments and a lack of emotional support.²⁴ These findings are consistent with the results of the present study, which identified psychological well-being as the lowest-rated dimension of adjustment among ethnic minority students.

Moreover, Isik et al. (2018) emphasized the importance of social engagement in fostering a sense of

belonging in school,²⁵ which subsequently influences other areas of adjustment, such as academic achievement. This is corroborated by the findings of the current study, which highlight the significant role of social engagement in the overall school adjustment of ethnic minority students. However, some studies have reported differing perspectives on psychological well-being. These findings suggest that insufficient psychological support provided by schools may account for the moderate or low levels of psychological well-being observed among ethnic minority students in this study. The results underscore the importance of targeted interventions to address the specific challenges faced by ethnic minority students, particularly in promoting social engagement and providing adequate psychological support, which are critical for enhancing overall school adjustment.

This study highlights academic stress as a significant predictor of school adjustment among ethnic minority students in Chiang Rai. Secondary schools in the region accommodate a highly diverse student population, including Hmong, Tai Yai, Lahu, Akha, Musoe (Lisu), Lua, and other groups. Many of these students primarily use their native languages in daily life, starkly contrasting with the Thai language used as the medium of instruction in schools. This linguistic barrier creates a dual burden for students, who must simultaneously learn the Thai language while comprehending academic content. The lack of confidence in Thai language skills often discourages students from asking questions or participating in class discussions, negatively affecting their academic performance and contributing to feelings of isolation.

The findings of this study align with those of Graham et al. (2022), who identified cultural and linguistic differences as major stressors for ethnic minority students, leading to a sense of exclusion within the school environment.²³ Similarly,

according to the OECD (2017), ethnic minority students often face linguistic and cultural barriers in schools, resulting in heightened stress and difficulties in social integration⁹. These challenges are further compounded by the competitive nature of academic environments, as evidenced by the high levels of stress reported by students when compared to peers with superior academic performance.

However, bilingual education programs have been shown to alleviate some of these challenges. Ma (2019) found that ethnic minority students in bilingual programs experienced lower levels of stress and achieved better academic outcomes.²⁶ This suggests that targeted language support may significantly mitigate academic stress and enhance school adjustment for ethnic minority students.

Cultural differences also emerge as a critical factor influencing school adjustment. The Thai educational system often lacks the structural accommodations necessary to support cultural diversity, requiring ethnic minority students to adapt to values and practices that may not align with their cultural norms. Social activities and teaching methods commonly employed in schools may be unfamiliar or incompatible with the traditions of these groups, leading to feelings of exclusion and a lack of acceptance. This observation is consistent with the study by Graham et al. (2022),²³ who emphasized the negative impact of cultural incongruence on ethnic minority students' school experiences.

Economic and family factors also contribute to the stress experienced by ethnic minority students. Many students come from low-income families, and limited access to essential learning resources, such as textbooks and school supplies, exacerbates their academic challenges. Stateless students, in particular, face additional barriers due to legal uncertainties and restricted educational opportunities, further intensifying their stress and diminishing their chances of

success in an education system that inadequately supports their needs. Additionally, family expectations to succeed academically and uplift the family's socio-economic status add another layer of psychological pressure.

Interestingly, this study's findings align with those of Isik et al. (2018),²⁵ who emphasized the importance of psychological support and positive teacher-student relationships in reducing stress associated with cultural and linguistic barriers. Such relationships can play a critical role in fostering resilience and promoting better school adjustment outcomes, even in diverse educational settings.

This study identifies academic management as a significant predictor of school adjustment among ethnic minority students in Chiang Rai. Effective academic management can either support or hinder students' ability to adapt to the school environment. If instructional methods are not tailored to meet the specific needs of ethnic minority students—such as incorporating local languages into teaching or connecting lesson content to students' cultural backgrounds—students may struggle to comprehend the material or relate their learning to real-life contexts. This aligns with the findings of Graham et al. (2022),²³ who emphasized that teaching approaches overlooking cultural diversity can exacerbate academic stress, making it more difficult for ethnic minority students to adjust and feel a sense of belonging in school.

Conversely, flexible and culturally responsive academic management—such as the inclusion of activities that encourage participation from students of diverse cultural backgrounds—can foster a learning environment that values and respects differences. Ma (2023)²⁶ highlighted that bilingual education programs not only help reduce language barriers but also enable ethnic minority

students to feel accepted within the education system, which boosts their confidence and reduces feelings of isolation. This is consistent with the findings of this study, where students reported the highest level of satisfaction with opportunities to ask questions and clarify doubts during lessons. This was followed by the relevance of the content to students' needs, while the least satisfaction was reported regarding opportunities provided by teachers and schools for students to express opinions and showcase their abilities.

Effective academic management plays a crucial role in facilitating access to knowledge, improving academic achievement, and reducing stress caused by academic failure. When students achieve better academic outcomes, they are more likely to feel motivated and confident in adapting to the educational environment. Furthermore, instructional approaches that actively engage students—such as collaborative learning or activities that encourage cross-cultural interaction—can enhance their sense of belonging and social integration within the school community.

From the perspective of Bronfenbrenner's ecological systems theory (1979),¹⁷ only individual-level factors, such as academic stress, and macrosystem-level factors, such as academic management, were identified as significant predictors of school adjustment among ethnic minority students. Other factors—such as family dynamics, peer relationships, school environment, traditions, and cultural beliefs—did not significantly explain the variance in school adjustment. This may be due to the unique challenges and limitations faced by ethnic minority students in navigating school life, which differ from those of other student groups. These limitations collectively contribute to stress, manifesting as difficulties with school adjustment.

Despite these challenges, ethnic minority students exhibited moderate levels of school adjustment, which can be attributed in part to their positive relationships with peers, teachers, and family members. This finding is consistent with previous studies that have highlighted the significant role of teacher-student relationships in reducing stress and promoting school adjustment, particularly among students facing cultural challenges.²⁷⁻²⁹ For ethnic minority students, a sense of trust and safety within the classroom is cultivated by teachers who demonstrate an understanding of their needs and communicate effectively. Furthermore, teachers who tailor their instructional methods to accommodate students' comprehension levels and cultural contexts can help to reduce academic pressure and enhance the overall learning experience.

Additionally, building stronger connections between the school and parents can further enhance school adjustment. Strengthening this relationship allows for better communication, support, and alignment of educational goals, ultimately improving students' ability to navigate the school environment. Furthermore, academic management strategies that prioritize inclusivity and cultural sensitivity—such as bilingual education or culturally responsive teaching methods—can reduce barriers and provide a more supportive learning environment.

Understanding school adjustment through the lens of Bronfenbrenner's ecological systems theory highlights the complexity of factors influencing ethnic minority students' experiences. While individual and macrosystem-level factors are prominent, other contextual elements—though not directly predictive—still indirectly shape students' ability to adapt to school life. In conclusion, school adjustment for ethnic minority students is shaped by a combination of personal and systemic factors. By addressing the

ecological context in which students learn and live, schools can create a more inclusive, supportive environment that enhances adjustment outcomes and ensures equitable opportunities for success.

CONCLUSION AND RECOMMENDATIONS

This study provides significant insights into the school adjustment of ethnic minority students in Chiang Rai, Thailand, highlighting the key dimensions of social engagement, academic achievement, and psychological well-being. While most students demonstrated moderate to good levels of adjustment, challenges remain, particularly in social and psychological aspects. The findings underscore the pivotal roles of school stress and academic management as predictors of school adjustment, reflecting the unique barriers these students face in an education system that may not fully accommodate their cultural and linguistic needs. The study emphasizes that ethnic minority students' ability to adjust at school is influenced by a combination of personal and systemic factors. While cultural diversity, language barriers, and socio-economic challenges present substantial hurdles, positive relationships with peers, teachers, and family members have a moderating effect, enabling students to achieve a moderate level of adjustment. The results further highlight the importance of inclusive academic management practices and the potential for strengthening school-family connections to enhance students' experiences and success in school.

To address the challenges and enhance the school adjustment of ethnic minority students, school administrators, teachers, and agencies involved in basic education should focus on developing academic management practices that incorporate cultural and local language elements into teaching methods and curriculum design. This integration would

help improve students' understanding and engagement in the classroom. Additionally, professional development programs should be provided to enhance teachers' understanding of cultural diversity and equip them with the skills needed to create inclusive classrooms that encourage active student participation. Supporting the psychological and social well-being of ethnic minority students is equally important. Schools should implement peer support programs and collaborative learning activities to strengthen social relationships and foster a sense of belonging within the school community. The provision of counseling and psychological support services is essential for addressing the emotional challenges faced by these students, thereby improving their overall school adjustment.

Strengthening the collaboration between schools and parents is another critical aspect. Schools should develop activities that actively involve parents in the educational process, such as parent-teacher meetings, training sessions, and cultural exchange programs. Building stronger connections between schools and ethnic minority communities would promote mutual understanding and the alignment of educational goals with family and cultural contexts, ultimately contributing to improved outcomes for students.

The limitations of this study include its cross-sectional design, which provides data at a single point in time and does not allow for the examination of changes or developmental trajectories in students' adjustment over time. Additionally, the reliance on self-reported data introduces potential response bias since participants may respond in ways they perceive as socially desirable or provide inaccurate information. Furthermore, differences in Thai language proficiency among ethnic minority respondents could affect the accuracy of the collected data.

Future research should address these limitations by exploring more in-depth and specific aspects of ethnic minority students' adjustment. For instance, employing qualitative methods such as in-depth interviews or focus group discussions could provide a richer understanding of students' personal experiences in adapting to school life, particularly in the social and psychological domains. These methods could also capture reflections on how school policies impact their daily lives. Moreover, longitudinal studies are recommended to track changes in students' adjustment over time, such as during the initial stages of enrollment, throughout their school years, and during the transition to higher levels of education. These approaches would offer a more comprehensive understanding of the dynamics of school adjustment and inform interventions aimed at fostering better educational outcomes for ethnic minority students.

AUTHOR CONTRIBUTIONS

Conceptualization and design: RA, NM, AP, PK; Literature review: RA, AP, PK; Statistical analysis and data interpretation: RA, NM; Drafting of the manuscript: RA, NA, AP; Critical revision for important intellectual content: RA, PK; Supervision: NM. All authors reviewed the manuscript.

ETHICAL CONSIDERATION

Ethical approval was obtained from the Research Ethics Committee, Faculty of Social Sciences and Humanities, Mahidol University (Approval No. 2024/034.2902).

ACKNOWLEDGMENTS

The authors sincerely thank the ethnic minority students in Chiang Rai

Province who participated in this study, as well as the school principals and teachers for their invaluable support in facilitating data collection. This project is funded by National Research Council of Thailand (NRCT).

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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