

Research Article:

Disciplinary Problems Among FELDA Adolescents: A Systematic Literature Review

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ABSTRACT

Adolescents in Federal Land Development Authority (FELDA) settlements face unique psychosocial challenges that contribute to disciplinary problems, yet systematic evidence remains limited. This systematic literature review aimed to identify and analyse the characteristics of students with disciplinary problems in FELDA settlements and examine contributing factors to inform intervention strategies. Following PRISMA 2020 guidelines, two databases: Scopus and Web of Science were searched for studies published between 2000 until 2025. Study quality was assessed using the Mixed Methods Appraisal Tool (MMAT). Thematic synthesis was employed to analyse findings across each selected study. Ten studies met inclusion criteria, comprising seven quantitative, two qualitative, and one mixed-methods study. Thematic analysis revealed three main themes: (1) characteristics of FELDA students with disciplinary problems, (2) contributing factors, and (3) intervention strategies and protective factors. Male adolescents demonstrated significantly higher rates of disciplinary problems, with 54.1% of males reporting smoking compared to 4.3% of females. Family and peer influence was particularly strong in contributing factors. Religious-based interventions, group counselling, and academic support were commonly recommended as protective interventions. Despite these findings, the evidence base is limited in both size and methodological rigour. Most studies were cross-sectional and varied in quality, thus limiting the strength of conclusions. To strengthen the evidence base, future research should employ more robust methodologies, particularly longitudinal and intervention studies tailored to the cultural context of FELDA populations.

Keywords: FELDA, adolescents, disciplinary problems, rural youth, behavioural problems

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INTRODUCTION

Adolescence is a critical period in human development. It involves important changes in identity, emotional regulation, and social relationships. In Malaysia, adolescents who live in Federal Land Development Authority (FELDA) settlements face unique challenges. These include limited economic opportunities, poor access to quality education, low parental involvement, and weak community support (Hashim et al., 2009; Lim et al., 2015; Mak Din et al., 2020). FELDA was established in 1956 as an agricultural development scheme. Over time, it has grown into a national rural resettlement program with over 400 communities (Abdul Rashid et al., 2022). Although disciplinary problems such as truancy, aggression, substance use, and other school-related misconduct occur among adolescents across urban and rural settings (Hisham et al., 2010; Lim et al., 2006; Abdullah et al., 2018), their prevalence has been consistently higher in FELDA settlements. For example, while adolescent smoking occurs in both urban and rural settings, its prevalence has been reported to be highest in FELDA communities (Lim et al., 2006; 2015). The risk factors associated with disciplinary problems such as peer influence, lack of parental attention, low socioeconomic status and low parental education are broadly similar across contexts (Mohd Radzi et al., 2022; Mohd Radzi et al., 2021; Zolkanain & Yusof, 2020; Hasani et al., 2019).

However, the structural disadvantages in FELDA communities, including lower educational attainment and limited public facilities, may amplify these risks (Justine et al., 2020). This raises an important question: if the risk factors are comparable, why are FELDA adolescents disproportionately vulnerable? Beyond behavioural concerns, disciplinary issues are strongly linked to adolescents' psychological outcomes. Truancy, substance use, and related misconduct have been associated with lower academic performance, self-concept and poorer mental health (Yahaya et al., 2009; Arshat, 2010; Radzak et al., 2023; Arifain et al., 2024). Despite evidence that FELDA adolescents are more likely to engage in these behaviours, studies examining how disciplinary problems affect their self-concept remain scarce and fragmented. While some studies have included FELDA adolescents, they are often reported under broader "rural" categories, making the unique FELDA context less visible (Abdullah et al., 2018; Lim et al., 2021). Consequently, the extent to which disciplinary issues undermine self-concept in FELDA adolescents also remains unclear. Given these gaps, a systematic literature review (SLR) is both timely and necessary. By gathering existing evidence on disciplinary problems and self-concept among FELDA adolescents, this review aims to:

1. Identify and analyse the characteristics of students with disciplinary problems in FELDA settlements based on existing studies.
2. Examine the contributing factors and behavioural patterns that may influence these problems and help inform future interventions.

By reviewing past studies, this article hopes to improve understanding of adolescent behaviour in FELDA. It also aims to suggest better psychological and educational strategies that suit this unique community.

METHODOLOGY

Review Protocol – PRISMA

This study used a systematic literature review (SLR) method to explore the psychosocial traits and disciplinary behaviours of adolescents living in FELDA settlements. The review process followed the PRISMA 2020 guidelines (Preferred Reporting Items for Systematic Reviews and Meta-Analyses), which provide a clear framework to ensure transparency, consistency, and quality throughout the review (Page et al., 2021).

Identification

The identification phase began with a structured search for studies related to student disciplinary problems in FELDA settlements. To guide this process, a list of keywords was created based on the review's focus. These keywords included: "FELDA", "Federal Land Development Authority", "Malaysia", "student", "adolescent", "youth", "disciplinary problems", "behavioural problems", "truancy", "smoking", "substance abuse", "bullying", and "antisocial behaviour". Boolean operators (AND, OR) were used to combine terms and improve the accuracy of the search results. Two major databases were selected: Scopus and Web of Science (WoS). Both were chosen for their wide coverage of peer-reviewed publications in education, psychology, and social sciences. Although ERIC and PsycINFO are commonly used for adolescent research, a preliminary scoping search showed that FELDA-related studies were rarely indexed in these databases. In contrast, relevant FELDA studies were consistently found in Scopus and WoS. In addition to these two core databases, supplementary searches were also conducted in Google Scholar and MyCite to check for Malaysian-based FELDA studies that might not be indexed internationally. However, since the purpose of this review was to synthesise evidence from peer-reviewed and indexed literature, only studies retrieved from Scopus and WoS were formally included in the screening and final selection. Multiple search strategies were used within each database to make sure relevant studies were not missed. These included FELDA-specific terms, broader behavioural keywords, and alternative ways of describing the context. The search was limited to empirical studies published between 2000 and 2025, written in English and Bahasa Melayu, and focused on adolescents or students in Malaysian FELDA areas. This process produced a total of 25 articles for screening (Scopus: $n = 14$, WoS: $n = 11$). Table 1 shows the search string used in the Scopus and WoS databases.

Table 1. Search string used in the selected database

Database	Search string
Scopus	TITLE-ABS-KEY(((“FELDA” OR “Federal Land Development Authority”) AND (“Malaysia*” OR “Malaysian”) AND (“student*” OR “pupil*” OR “adolescent*” OR “youth” OR “teenager*” OR “school children”) AND (“disciplinary problem*” OR “behavioural problem*” OR “behaviour* problem*” OR “conduct problem*” OR “social problem*” OR “truancy” OR “absenteeism” OR “smoking” OR “substance abuse” OR “bullying” OR “aggressive behaviour” OR “antisocial behaviour” OR “delinquent behaviour” OR “academic misconduct” OR “school dropout”)))
WoS	TS=((“FELDA” OR “Federal Land Development Authority”) AND (“Malaysia*” OR “Malaysian”) AND (“student*” OR “pupil*” OR “adolescent*” OR “youth” OR “teenager*” OR “school children”) AND (“disciplinary problem*” OR “behavioural problem*” OR “behaviour* problem*” OR “conduct problem*” OR “social problem*” OR “truancy” OR “absenteeism” OR “smoking” OR “substance abuse” OR “bullying” OR “aggressive behaviour” OR “antisocial behaviour” OR “delinquent behaviour” OR “academic misconduct” OR “school dropout”))

Screening

In the second stage of the review, a total of 25 articles were screened based on specific inclusion and exclusion criteria established by the researchers (see Table 2). To be included, articles had to be peer-reviewed journal publications or empirical research reports that presented original data. Therefore, publications such as opinion pieces, editorials, systematic reviews, meta-analyses, books, and commentary articles were excluded. In addition, eligible studies were required to be written in either English or Bahasa Melayu. Only studies published within a 25-year period, from the year 2000 to 2025, were considered. Most importantly, the selected articles needed to focus on students or adolescents in FELDA settlements who demonstrated disciplinary or behavioural issues. The content of the articles also had to fall within relevant subject areas, including psychology, education, public health, social sciences, or behavioural sciences. After applying these criteria, 25 articles were screened. During the title and abstract review, five articles were excluded for not meeting scope, and four duplicate records were removed. This left 16 articles for full text assessment. Of these, six were excluded after quality appraisal for methodological weaknesses. As a result, 10 articles were retained for full-text review and final inclusion in this systematic literature review.

Table 2. Inclusion and exclusion criteria

Criteria	Inclusion	Exclusion
Timeline	2000–2025	Before 2000
Document type	Peer-reviewed journal articles, conference proceeding, empirical research reports	Opinion articles, editorials, systematic reviews, meta-analyses, books and commentary pieces
Language	English, Bahasa Melayu	Other than English and Bahasa Melayu
Subject area	Psychology, Education, Public Health, Social Sciences, Behavioural Sciences	Physical Sciences, Engineering, Mathematics, Computer Science, Business
Research focus	Studies focusing on FELDA students with disciplinary/behavioural problems in Malaysian settings	Studies outside FELDA context, non-Malaysian settings, or without focus on disciplinary problems

Eligibility

In the third stage, the 10 remaining articles underwent full-text review to confirm they met all inclusion criteria. All articles focused on FELDA students with disciplinary problems in Malaysian settings and provided empirical data suitable for analysis. Therefore, all 10 studies were deemed eligible for inclusion in the systematic review. The searching process can be seen in Figure 1.

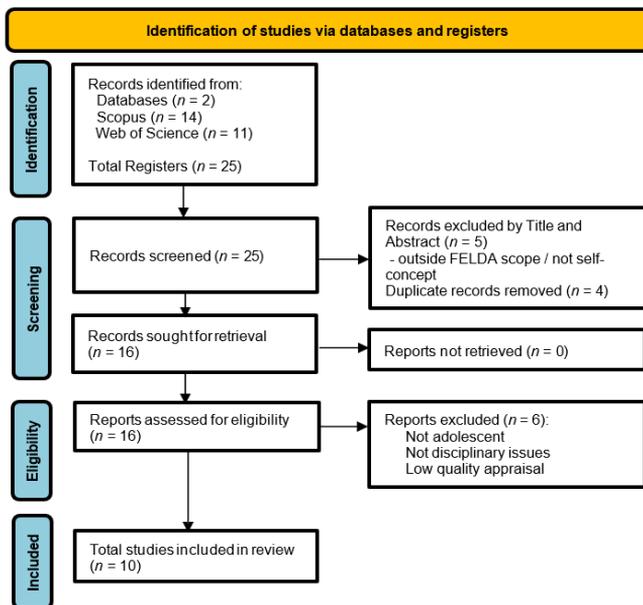


Figure 1. Flow diagram of the searching process

Quality Appraisal

The quality appraisal process was carried out to ensure that all selected studies used appropriate methods and clear analysis. To support this process, the Mixed Methods Appraisal Tool (MMAT) developed by Hong et al. (2018) was used. MMAT is designed to evaluate different types of research, including qualitative studies, quantitative studies (both randomised and non-randomised), descriptive studies, and mixed-methods research. Each study was first assessed using two screening questions from MMAT to determine whether it was suitable for full evaluation. After this, each article was reviewed using five core criteria based on its research design. For qualitative studies, the reviewers examined whether the research questions were well defined, the data collection methods were appropriate, and the analysis was consistent with the data. For quantitative designs, the focus was on the sampling strategy, the representativeness of the sample, the accuracy of the measurement tools, and the suitability of the data analysis.

For mixed-methods research, MMAT was used to assess whether the integration of methods was well explained, whether both parts were connected meaningfully, and whether the study addressed any inconsistencies between qualitative and quantitative findings. Two reviewers (the corresponding author and a co-author) independently assessed each article, paying close attention to the methodology and analysis sections. All studies were scored based on the five MMAT criteria, with each criterion marked as “Yes”, “No”, or “Can’t tell.” A study was included if it met at least three of the five criteria. All decisions were made by mutual agreement between the reviewers. At the end of this process, all 10 articles met the minimum quality requirements. Among them, four studies fulfilled all five criteria, three fulfilled four criteria, and another three met at least three criteria. The results of the quality assessment are summarised in Table 3.

Table 3. Results of the quality assessment

Study	Research design	QA1	QA2	QA3	QA4	QA5	Number of criteria fulfilled	Inclusion in the review
Lim et al. (2006)	QN (NR)	√	√	√	√	√	5/5	√
Hisham et al. (2010)	MM	√	√	C	C	√	3/5	√
Lim et al. (2015)	QN (NR)	√	√	√	√	√	5/5	√
Hassan et al. (2016)	QN (DC)	√	C	√	X	√	3/5	√

Study	Research design	QA1	QA2	QA3	QA4	QA5	Number of criteria fulfilled	Inclusion in the review
Ibrahim et al. (2017)	QN (NR)	√	√	√	X	√	4/5	√
Abdullah et al. (2018)	QN (DC)	√	√	√	C	√	4/5	√
Hock et al. (2021)	QN (NR)	√	√	C	√	√	4/5	√
Mohd Afandi et al. (2021)	QL	√	√	√	√	√	5/5	√
Tahir et al. (2021)	QL	√	√	√	√	√	5/5	√
Talib & Kutty (2022)	QN (DC)	√	C	√	C	√	3/5	√

Notes: QA = Quality Assessment, QN (NR) = Quantitative Non-randomised, QN (DC) = Quantitative Descriptive, QL = Qualitative, MM = Mixed-Methods, C = Can't tell, X = No.

Data Abstraction and Analysis

All selected articles were analysed thematically to allow for integration of findings across different research designs. Since this review included both qualitative and quantitative studies, a thematic synthesis approach was used. This method is recommended for integrative reviews that involve diverse methodologies, as it provides both flexibility and depth in identifying key patterns across multiple sources (Whittemore & Knafl, 2005; Flemming et al., 2019). Thematic analysis in this review followed the structured steps proposed by Kiger and Varpio (2020) and Braun and Clarke (2019). First, the researchers familiarised themselves with the entire dataset by reading all selected articles multiple times. This step helped build a strong understanding of the findings and provided the foundation for the next stages.

In the second step, initial codes were generated. The researchers identified and labelled relevant sections of the data that aligned with the review objectives. Each article was reviewed closely, and specific information related to disciplinary behaviour among FELDA adolescents was coded. This process followed an inductive approach, meaning the codes were developed directly from the data rather than based on pre-existing theories. Next, the codes were reviewed and grouped into broader categories to develop initial themes. The researchers looked for recurring patterns, connections, and shared meanings across the studies. As a result, three main themes were developed. These themes were then examined more closely to identify six related sub-themes. After the themes were identified, a review and refinement process was carried out.

The full set of themes and sub-themes was presented to two experts in qualitative synthesis. These experts assessed the relevance, clarity, and consistency of the themes in relation to the review objectives. Based on their feedback, all three main themes and six sub-themes were confirmed and retained for final analysis. This structured and iterative process helped ensure that the synthesis was both systematic and grounded in the original data. It also allowed the researchers to capture the complexity of the findings while maintaining a clear link to the research objectives.

RESULTS

Background of the Selected Studies

All 10 selected studies were conducted in Malaysia and focused specifically on adolescents living in FELDA settlements (see Figure 1). The geographical coverage of these studies varied across different regions of the country. Several studies were carried out in Johor, including those by Lim et al. (2006, 2015), Hock et al. (2021), and Abdullah et al. (2018). Pahang was another commonly studied location, featured in the works of Abdullah et al. (2018), Talib and Kutty (2022), and Mohd Afandi et al. (2021). One study took place in the Kedah–Perlis region (Hassan et al., 2016), while another focused on Perak (Tahir et al., 2021). In addition, Ibrahim et al. (2017) conducted a large-scale study that included multiple FELDA regions throughout Peninsular Malaysia. Their sample covered youths from the northern, eastern, and southern zones, including both marginalised and mainstream communities.

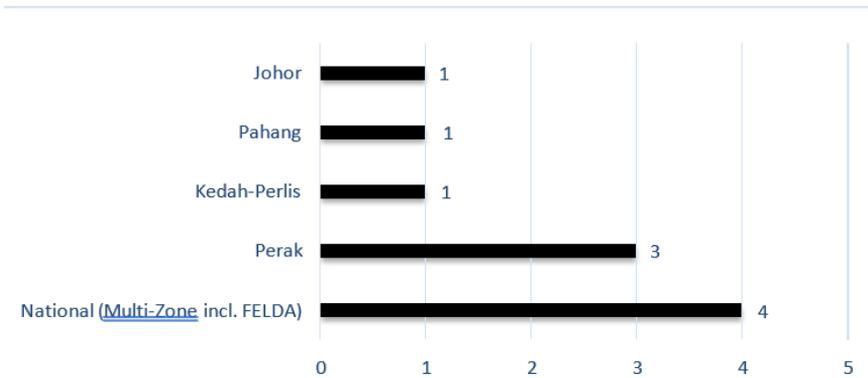


Figure 2. States where the selected studies were conducted

Among the 10 selected studies, seven used quantitative research designs (see Figure 3). Of these, four applied quantitative non-randomised designs (Lim et al., 2006; Lim et al., 2015; Ibrahim et al., 2017; Hock et al., 2021), while three employed quantitative descriptive designs (Hassan et al., 2016; Abdullah et al., 2018; Talib & Kutty, 2022).

In addition, two studies used qualitative designs, namely Mohd Afandi et al. (2021) and Tahir et al. (2021). Only one study, conducted by Hisham et al. (2010), adopted a mixed-methods approach. This distribution shows that most of the existing research on disciplinary issues among FELDA adolescents relies on quantitative methods. In contrast, only a small number of studies use qualitative or mixed-methods designs, which are more suitable for exploring the deeper psychological and social aspects of adolescent behaviour.

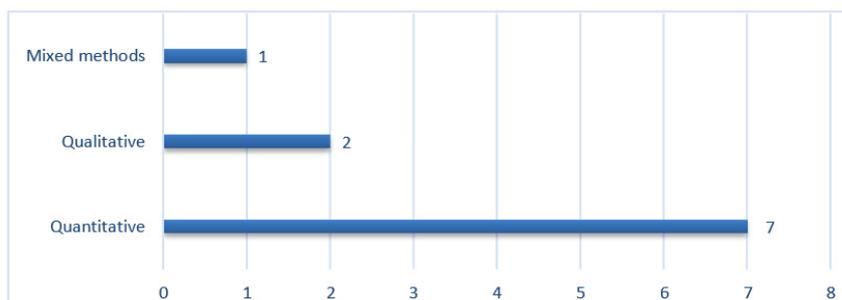


Figure 3. Research design of selected studies

The publication years of the selected studies spanned from 2006 to 2022, demonstrating sustained research interest in FELDA youth behavioural issues over nearly two decades (Figure 4). The earliest study was conducted by Lim et al. (2006), followed by Hisham et al. (2010), Lim et al. (2015), Hassan et al. (2016), Ibrahim et al. (2017), Abdullah et al. (2018), Hock et al. (2021), Mohd Afandi et al. (2021), Tahir et al. (2021), and the most recent by Talib and Kutty (2022). This temporal distribution indicates consistent academic attention to behavioural problems among FELDA youth populations, with notable research activity in the 2015–2022 period, reflecting growing concerns about youth development challenges in these rural settlement communities.

The selected studies were published between 2006 and 2022, showing a steady interest in behavioural issues among adolescents in FELDA settlements over nearly two decades. The earliest study was by Lim et al. (2006), followed by Hisham et al. (2010), Lim et al. (2015), Hassan et al. (2016), Ibrahim et al. (2017), and Abdullah et al. (2018). More recent contributions include Hock et al. (2021), Mohd Afandi et al. (2021), Tahir et al. (2021), and the latest by Talib and Kutty (2022). This timeline reflects a consistent focus on FELDA youth across the years, with increased research activity between 2015 and 2022. This trend suggests growing academic concern about behavioural and developmental challenges faced by adolescents in rural FELDA communities.

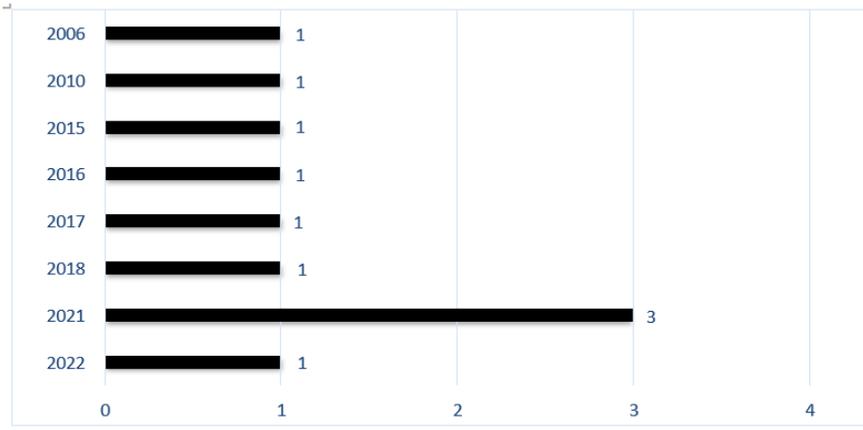


Figure 4. Publication years of selected studies

The Developed Themes

The thematic analysis was undertaken on 10 selected articles resulted in three main themes: (1) characteristics of FELDA students with disciplinary problems; (2) contributing factors to disciplinary problems; and (3) intervention strategies and protective factors. These three themes further produced six sub-themes (see Table 4). Based on the results, three themes and six sub-themes provided answers to the main research objectives of this SLR: “To systematically identify and analyse the characteristics of students with disciplinary problems in FELDA settlements based on empirical literature” (RO1) and “To examine the contributing factors and behavioural patterns associated with disciplinary problems among FELDA students to inform intervention strategies” (RO2). The detailed analysis of these themes is explained in the following section.

Characteristics of FELDA Students with Disciplinary Problems

Demographic and personal profiles

One of the most consistent demographic factors found across the studies is gender, where male students display significantly higher rates of disciplinary behaviour. For example, Lim et al. (2006) reported that 54.1% of male students were smokers, compared to only 4.3% of females. Similarly, in a follow-up study, Lim et al. (2015) found that males were 6.6 times more likely to smoke weekly than females (35.8% vs. 3.1%). In line with this, Ibrahim et al. (2017), who conducted a large-scale study involving 5,237 adolescents, found that males in both marginalised and mainstream areas showed more behavioural problems, hyperactivity, and peer-related issues.

In addition, Abdullah et al. (2018) found that peer influence contributed more strongly to truancy among male students compared to females ($p = 0.005$). Besides gender, age also emerged as a key factor. Most behavioural problems were reported among adolescents aged 15 to 25 years. However, Lim et al. (2006) showed that many adolescent smokers began smoking between the ages of 11 and 13, with some starting as young as 5 years old. Supporting this, Hassan et al. (2016) reported that 37.3% of children aged 7 to 12 were already involved in bullying.

This suggests that disciplinary patterns may begin much earlier than expected. Moreover, academic performance appeared to be a strong predictor of behavioural problems. According to Lim et al. (2006), students with good academic results were less likely to smoke, while those with weaker grades had a higher risk. Later, Lim et al. (2015) found that students who received grades C, D, or E were 2.47 times more likely to smoke weekly compared to their better-performing peers. Likewise, Abdullah et al. (2018) reported that poor academic achievement was significantly associated with truancy. Socioeconomic background was also a recurring theme. Since all the studies were conducted in FELDA settlements, most of the students came from low-income families facing social and geographic challenges. For instance, Abdullah et al. (2018) identified socioeconomic status as the second most influential factor related to truancy (mean = 1.0830). Meanwhile, Ibrahim et al. (2017) showed that youth from marginalised areas experienced more behavioural issues than those in mainstream communities.

Table 4. Findings

Author/Theme	Characteristics of FELDA students with disciplinary problems		Contributing factors		Intervention strategies and protective factors	
	DPP	TDP	FF	PF	PM	EBI
Lim et al. (2006)	√	√	√	√	√	√
Hisham et al. (2010)		√	√			
Lim et al. (2015)	√	√			√	√
Hassan et al. (2016)	√	√		√		
Ibrahim et al. (2017)		√	√			
Abdullah et al. (2018)	√	√		√		√
Hock et al. (2021)			√			√
Mohd Afandi et al. (2021)			√		√	√
Talib & Kutty (2022)		√	√		√	
Tahir et al. (2021)		√		√		

Notes: DPP = Demographic and Personal Profiles, TDP = Types of Disciplinary Problems, FF = Family Factors, PF = Peer and Social Factors, PM = Protective Mechanisms, EBI = Evidence-Based Interventions.

In conclusion, students with disciplinary problems in FELDA settlements tend to be male adolescents, often with weak academic performance and limited socioeconomic support. These findings suggest that risk factors such as gender, age, academic struggles, and poverty are interrelated, and should be addressed through targeted interventions.

Types of disciplinary problems

The systematic review identifies a wide range of disciplinary problems among FELDA students, from minor rule-breaking to serious antisocial and psychological concerns. Importantly, most students did not display isolated infractions. Instead, they often showed overlapping and co-occurring behavioural patterns. One of the most frequently reported issues involved smoking. For example, Lim et al. (2006) found that 29.7% of Form 4 students smoked cigarettes, with a clear gender difference. Among males, 54.1% smoked, compared to only 4.3% of females. Many of these students began smoking between the ages of 11 and 13, and 56.7% of male students reported initiating smoking before entering secondary school. In a later study, Lim et al. (2015) found that 19.0% of students smoked weekly, and those living in FELDA settlements were 9.42 times more likely to smoke than those in non-FELDA areas.

Similarly, Tahir et al. (2021) found that adolescents aged 16 to 19 in FELDA areas were involved in *ketum* (kratom) use. This behaviour was largely driven by peer influence and curiosity. In addition to substance-related problems, other common school-based infractions included truancy and bullying. Abdullah et al. (2018) defined truancy as being absent from school for three or more consecutive days. Their findings showed that peer influence was the dominant factor, with a reported mean score of 2.0349. Students who frequently skipped school often experienced additional behavioural difficulties. This pattern was also reflected in the findings of Hassan et al. (2016), who reported that 37.3% of primary school children in FELDA areas were involved in bullying. Verbal bullying was the most frequent type, followed by relational and physical bullying. Most bullying incidents occurred during recess, indicating a need for better supervision during break times.

In more severe cases, antisocial and criminal behaviours were also documented. Hisham et al. (2010) reported incidents of fighting, theft, vandalism, gambling, illegal racing, and gang involvement among FELDA youth. Talib and Kutty (2022) noted similar issues, including robbery and sexual misconduct. These findings suggest that some students may follow a progression from less serious infractions, such as smoking, to more serious forms of misconduct over time. Another critical area involved emotional and psychological issues. Ibrahim et al. (2017), in a sample of 5,237 youths, found that male students experienced higher levels of behavioural disorders, hyperactivity, and peer problems, while female students reported more emotional difficulties. Talib and Kutty (2022) also found that although many FELDA youth reported moderate levels of psychological well-being, weak relationships with parents and peers pointed to a lack of emotional and social support.

Across all studies, comorbidity of behavioural problems was a consistent theme. Students with one disciplinary issue often struggled with multiple others. Lim et al. (2006) linked smoking with poor academic performance. Hisham et al. (2010) found that family dysfunction frequently co-occurred with truancy, substance use, and antisocial behaviour. Additionally, Abdullah et al. (2018) reported that students who were often truant also faced peer pressure, family instability, and economic hardship. In conclusion, the reviewed literature suggests that disciplinary problems in FELDA communities often begin early and tend to escalate over time. Behaviours such as smoking, typically starting between the ages of 11 and 13, may serve as early indicators of more serious issues. The combination of peer influence, community isolation, and multiple co-existing problems creates serious challenges for educators and counsellors in rural FELDA schools.

Analysis of the 10 selected studies revealed four recurring types of disciplinary problems among FELDA adolescents: smoking, truancy, substance abuse, and fighting. Smoking emerged as the most frequently reported issue, highlighted in five of the studies (Lim et al., 2006; Lim et al., 2015; Hock et al., 2021; Mohd Afandi et al., 2021; Talib et al., 2022). Meanwhile truancy appeared in three (Hisham et al., 2010; Abdullah et al., 2018; Mohd Afandi et al., 2021). Substance abuse was reported in three studies (Hisham et al., 2010; Talib et al., 2022; Tahir et al., 2021). Fighting in two studies (Hisham et al., 2010; Ibrahim et al., 2017) and one study in bullying (Hassan et al., 2016). Overall, smoking and truancy were the most prevalent problems across FELDA contexts, whereas substance abuse, fighting and bullying, although often described as more severe behavioural risks, were less frequent.

Contributing Factors to Disciplinary Problems

Family factors

Family dynamics consistently appear as a key factor contributing to disciplinary problems among students in FELDA settlements. Empirical findings show that both direct and indirect parental influences can significantly shape adolescent behaviour. One of the most consistent patterns involves parental modelling, especially when it comes to smoking. For example, Hock et al. (2021) found that students whose fathers smoked were 81% more likely to start smoking themselves. In a similar study, Lim et al. (2006) reported that having an older brother who smoked increased a student's risk of smoking by more than four times. These findings suggest that adolescents are highly influenced by behaviour they observe within their families, sometimes even more than by their peers. In addition to modelling, family dysfunction and instability are major concerns. Studies report that adolescents from broken families, divorced households, or homes lacking stable parental figures are more prone to behavioural problems.

Hisham et al. (2010) observed that students from disrupted families in FELDA communities showed higher levels of misbehaviour. This was often linked to a lack of supervision and consistent guidance. Similarly, Mohd Afandi et al. (2021) highlighted that students who lived with grandparents due to parental separation were more likely to engage in truancy, substance use, and emotional instability. One reason for this was the limited religious or moral support in these homes. Parental supervision and involvement are also critical. In many FELDA communities, economic hardship and parents' work commitments make it difficult for them to monitor their children effectively. Hisham et al. (2010) and Abdullah et al. (2018) both found that low parental involvement was associated with increased cases of truancy and social misconduct. When discipline and emotional support are missing, adolescents are more likely to engage in risky behaviours.

Furthermore, the quality of the parent-child relationship plays a role in shaping emotional and behavioural outcomes. Talib and Kutty (2022) reported that weak emotional bonds between parents and children were linked to problems such as substance use, theft, and sexual misconduct. Their findings showed a weak correlation between mother-child bonding ($r = 0.174$) and father-child bonding ($r = 0.232$) with psychological well-being. This suggests that simply having both parents at home is not enough. What matters more is the presence of a warm and supportive relationship. Another factor that adds to the problem is financial stress. Families facing poverty, unemployment, or large household sizes often experience high levels of pressure, which reduces their ability to guide or supervise their children. Hisham et al. (2010) pointed out that these conditions often lead to neglect.

Ibrahim et al. (2017) also found that youth in underprivileged areas, including FELDA, displayed different patterns of behavioural problems due to financial strain. In summary, the findings clearly show that family-related factors, such as poor role modelling, weak supervision, emotional disconnect, and financial hardship play a critical role in the development of disciplinary issues among FELDA adolescents. These insights support the research objective by highlighting the importance of family environment in shaping student behaviour.

Peer and social factors

Peer influence and social dynamics are key contributors to disciplinary problems among adolescents living in FELDA settlements. Multiple studies have shown that peer relationships strongly shape adolescent behaviour, sometimes even more than family or school-related factors. For example, Lim et al. (2006) identified peer smoking as the strongest predictor of smoking initiation among FELDA students, surpassing the influence of parental modelling. Similarly, Abdullah et al. (2018) found that peer pressure was the most dominant factor leading to truancy among secondary school students in FELDA areas, with a reported mean score of 2.0349. This was higher than other factors such as socioeconomic status and teacher-related issues. In particular, male students appear to be more affected by peer influence.

Abdullah et al. (2018) reported a significant gender difference in truancy patterns ($p = 0.005$), while Lim et al. (2015) found that male students with friends who smoked were over four times more likely to become weekly smokers (aOR = 4.03). These results suggest that peer networks among male adolescents can reinforce risky behaviours such as truancy, smoking, and other forms of misconduct. In addition to smoking and absenteeism, peer groups also play a central role in other problem behaviours. Tahir et al. (2021) found that ketum (kratom) use among FELDA adolescents often began through peer networks. These peers not only introduced the substance but also provided social approval, which encouraged continued use. Many of the participants shifted from occasional to mixed substance use over time, reflecting a pattern of peer-driven escalation.

Likewise, bullying was also reported as a peer-related issue. According to Hassan et al. (2016), 37.3% of students in FELDA settlements were involved in bullying, with verbal bullying being the most common, followed by relational and physical aggression. Furthermore, the social structure of FELDA communities may increase these risks. Many FELDA areas are geographically isolated and socially insular, which limits students' exposure to diverse peer groups and positive role models. As a result, adolescents often depend heavily on local peer networks for social belonging. This dynamic becomes more concerning when it overlaps with weak family bonds. Talib and Kutty (2022) noted that adolescents with limited emotional connection to their parents often sought validation from peer groups, even when those groups encouraged misconduct.

In summary, peer influence operates as both a direct and compensatory factor in shaping student behaviour in FELDA. When emotional support from family is lacking, adolescents may rely even more on their peers, increasing the likelihood of engaging in problematic activities. These findings reinforce the idea that peer and family influences do not act in isolation, but rather in combination, contributing to the disciplinary issues observed in FELDA communities.

The included studies consistently highlighted four major contributing factors to disciplinary problems: family, peers, community, and individual (self). Family factors were most frequently emphasised, particularly issues such as lack of parental monitoring, low involvement in children's schooling, and weak parent-child communication. Peer influence was also a dominant theme, especially the role of deviant peer groups in encouraging smoking and truancy. Community factors, such as limited access to recreational facilities and exposure to drug availability in FELDA settlements, were reported in several studies. Finally, self-related factors, including low self-control, poor academic motivation, and negative self-concept, were discussed as internal contributors to disciplinary issues.

Intervention Strategies and Protective Factors

Protective mechanisms

This subtheme highlights several protective mechanisms that help reduce disciplinary problems among students in FELDA settlements. One key factor is increased knowledge about the dangers of smoking. According to Lim et al. (2015), students who are aware of smoking hazards and hold negative attitudes toward the behaviour are less likely to become smokers. In addition, strong emotional connections with family and peers also serve as important protective factors. Talib and Kutty (2022) found that adolescents who had better relationships with parents and friends showed improved psychological well-being. As a result, these students were less likely to engage in behaviours such as substance abuse or misconduct. Furthermore, religious-based programs were also identified as effective in supporting at-risk youth.

For instance, Mohd Afandi et al. (2021) implemented a programme that included modules on life purpose, Quranic reflection, and stress management. Their findings showed that these activities helped improve students' emotional stability and reduced behavioural risks. Participation in structured school activities was another recurring theme. Lim et al. (2006) observed that students who took part in extracurricular programs were less likely to smoke. These activities provided positive alternatives to risky behaviours and encouraged personal development. Overall, these findings support the research objective by identifying key traits of vulnerable students and offering strategies to strengthen resilience. They also highlight the need for holistic efforts that include education, emotional support, and community engagement to reduce disciplinary problems in FELDA communities.

Evidence-based interventions

Several studies included in this review propose evidence-based interventions for managing disciplinary issues among FELDA adolescents. One effective approach is group counselling that includes consistent mentorship and emotional support. Mohd Afandi et al. (2021) found this method especially helpful for students from broken or unstable families. Religious-based rehabilitation programs also showed promising results. These interventions typically include sessions on life purpose, moral values, and stress coping strategies. According to Mohd Afandi et al. (2021), students who participated in these programs demonstrated improved emotional regulation and reduced risk-taking behaviours. When it comes to smoking prevention, targeting peer and family influences is essential. Hock et al. (2021) and Lim et al. (2015) both reported that peer behaviour and parental smoking were major risk factors.

Therefore, prevention programmes must address these social influences directly. Academic engagement is another area for intervention. School programmes that strengthen academic support and promote participation in extracurricular activities have been shown to reduce truancy and risky behaviours. Both Lim et al. (2006) and Abdullah et al. (2018) supported the idea that these activities help keep students on a more positive path. In conclusion, these interventions support the overall aims of this review by offering practical ways to reduce behavioural problems among FELDA students. A multi-layered approach that includes counselling, religious support, academic engagement, and family involvement is recommended for long-term success. Taken together, the protective mechanisms and interventions discussed here emphasise the importance of addressing disciplinary problems through both preventive and supportive strategies that are tailored to the needs of FELDA youth.

DISCUSSION

Student Characteristics and Problem Patterns

FELDA adolescents exhibit a distinct vulnerability profile characterised by early onset risk behaviours and concentrated economic disadvantage. Males show particularly pronounced risk patterns, with 94.7% of adolescent smokers being male (Mohd Radzi et al., 2021) and smoking onset at 12.23 years compared to 12.93 years in general rural areas (Lim et al., 2006). This contrasts with urban contexts where gender differences are more moderate due to changing social norms (Mohd Radzi et al., 2021). General rural adolescents also show concerning patterns, with 80% regarding themselves as addicted to nicotine and 44% starting smoking at 12-13 years, but FELDA demonstrates more concentrated risk clustering (Mohd Radzi et al., 2022). The early initiation extends beyond smoking to truancy and academic disengagement, suggesting geographic isolation and limited supervision accelerate risk behaviour development compared to urban environments with diverse support systems.

Academic performance emerges as a universal risk predictor, but operates through distinct mechanisms in FELDA settlements. While urban students have access to academic resources and rural students often have traditional educational values, FELDA families face triple disadvantage: limited parental educational background, geographic isolation from support services, and economic pressures prioritising immediate income over education (Hashim et al., 2009; Fakhruddin et al., 2023). However, recent research using expert opinions found less agreement that academic performance directly causes behavioural problems (Khalid et al., 2025). This differs from our review, where academic performance was a strong predictor. The difference might exist because FELDA students face unique challenges. Poor academic performance may have stronger effects on behaviour in FELDA communities than in regular schools.

Khalid et al. (2025) noted that while factors identified in Malaysian contexts may be universal, they may not be fully applicable to students in rural areas or FELDA settlements, where unique challenges exist. Peer influence is the strongest factor in student truancy (mean = 2.0349), more than family or economic factors (Abdullah et al., 2018). This is different from urban areas where peer influence competes with many other influences, and rural areas where family influence is usually stronger. Recent expert research confirms that peer influence significantly affects student behaviour problems (Khalid et al., 2025). This pattern is also seen in rural adolescents, who show similar peer influence scores for truancy, along with economic pressures and poor teacher attitudes (Abdullah et al., 2018). A key feature is that FELDA students have multiple problems at once. They rarely have just one issue but show several problems together, including smoking, truancy, and poor grades (Hisham et al., 2010; Talib & Kutty, 2022).

This pattern of multiple problems is stronger than in urban areas where problems may be separate. Rural adolescents show similar patterns, with girls more likely to have multiple risk behaviours and boys aged 13-15 showing more delinquent behaviours in rural schools (Teh et al., 2019; Hasani et al., 2019). Economically, FELDA families earn very little, mostly below RM2,000 monthly, and depend heavily on palm oil prices (Hashim et al., 2009; Ngadiman et al., 2018). This creates different stress patterns compared to urban unemployment or other types of rural farming. However, recent expert research found less agreement that family economic struggles directly cause behaviour problems (Khalid et al., 2025). This differs from our findings where economic factors were important contributors to disciplinary problems in FELDA communities.

Overall, the findings indicate that disciplinary problems among FELDA adolescents are not isolated behaviours but occur as interconnected patterns that begin early and are shaped by overlapping social, academic, and economic challenges. While similar risk behaviours exist in urban and rural settings, the clustering of problems such as smoking, truancy, and poor academic performance appears more concentrated in FELDA settlements. This suggests that the combination of geographic isolation, peer dynamics, and persistent economic disadvantage creates a unique vulnerability profile that amplifies behavioural risks compared to other adolescent populations (Hisham et al., 2010; Talib & Kutty, 2022; Teh et al., 2019; Hasani et al., 2019; Abdullah et al., 2018; Hashim et al., 2009; Ngadiman et al., 2018; Khalid et al., 2025).

Contributing Factors

Family influence amplification characterizes FELDA contexts, where students with smoking fathers are 81% more likely to smoke compared to more moderate effects in urban studies (Hock et al., 2021; Lim et al., 2006). This occurs because geographic isolation limits exposure to diverse adult role models, making family influence more

concentrated. Weak parent-child bonding correlates with behavioural problems ($r = 0.174$ for mothers, $r = 0.232$ for fathers) (Talib & Kutty, 2022), but impact is magnified by absence of alternative support systems available in urban or traditional rural contexts. This aligns with recent research showing that parental involvement reduces behavioural problems, while lack of involvement increases vulnerability (Khalid et al., 2025). Rural contexts show similar family influence patterns, with authoritarian and authoritative parenting styles predominating, but rural families demonstrate better communication patterns and stronger family ties overall (Talin et al., 2021; Mohd Nasir & Tahrir Adli, 2023). Plantation work schedules create extended parental absence while economic dependency creates chronic stress (Yahaya et al., 2009).

FELDA's intergenerational education gap, where first-generation settlers have elementary education while second-generation achieves secondary or tertiary education, creates family dynamics different from urban families with gradual educational progression or traditional rural families with consistent levels (Fakhruddin et al., 2023). This cultural capital gap contributes to adolescent behavioural problems as parents struggle to guide children in unfamiliar educational contexts, unlike Malaysian rural adolescents who show stronger family communication patterns with positive self-concept outcomes (Mohd Nasir & Tahrir Adli, 2023). Rural adolescents generally benefit from more stable family structures, with only 7% from separated families compared to 48% among juvenile delinquents, and demonstrate significant relationships between family communication and youth self-concept (Mohammad & Nooraini, 2021; Mohd Nasir & Tahrir Adli, 2023).

The closed community structure creates peer influence amplification where peer smoking exposure shows stronger association with weekly smoking than family exposure (Lim et al., 2015), reversing typical influence hierarchies seen in other contexts. Supporting international research on rural adolescents, such as Chinese studies showing peer influence patterns among left-behind adolescents (Yang et al., 2023) and Spanish research indicating rural schools have higher bullying prevalence (Galán-Arroyo et al., 2023), FELDA's isolation intensifies peer relationship importance while limiting alternative influence sources. Rural Malaysian adolescents similarly demonstrate strong peer influence in delinquent behaviours, with association with deviant peers significantly contributing to juvenile delinquency despite cultural and parental backgrounds concept (Mohammad & Nooraini, 2021).

In conclusion, while family, peer, community, and self-factors are commonly reported in rural adolescent research, FELDA demonstrates how these influences are amplified by its settlement structure. Limited parental supervision due to plantation work, intergenerational education gaps, and closed community networks create conditions where risk factors overlap more strongly than in other contexts. Similar findings have been reported internationally, where rural adolescents with absent or migrant parents rely more heavily on peers and display weaker school attachment (Yang et al., 2023). What

distinguishes FELDA is that these conditions combine with historical and structural patterns, producing a higher vulnerability to disciplinary problems (Fakhrudin et al., 2023; Mohd Nasir & Tahrir Adli, 2023).

Intervention Approaches

Protective factors operate differently in FELDA contexts due to geographic isolation. While smoking hazard awareness serves as protection universally (Lim et al., 2015), FELDA adolescents may require community-wide knowledge interventions to overcome peer normalisation effects, unlike urban adolescents who can better translate knowledge into behaviour change through diverse reinforcement sources. Strong family and peer emotional connections provide protection but their scarcity makes them more critical than in contexts with alternative support sources (Talib & Kutty, 2022). Rural adolescents demonstrate similar protective patterns through strong family communication and cultural identity maintenance, with significant relationships between conversation-oriented family patterns and positive self-concept development (Mohd Nasir & Tahrir Adli, 2023; Mohamed Salleh & Bauer, 2018).

Religious based interventions show particular effectiveness in FELDA contexts, aligning with strong Islamic cultural foundations (Mohd Afandi et al., 2021). Programmes including Quranic reflection and life purpose modules demonstrate success, suggesting culturally grounded interventions may be more powerful than generic approaches used in urban contexts. This aligns with international research showing that culturally adapted interventions considering traditional values improve outcomes among rural adolescents (Mohamed Salleh & Bauer, 2018). Rural contexts generally benefit from religious and cultural interventions, with studies showing Islamic organisational activities effectively building youth identity and providing positive community engagement (Ahmad Puat & Abdullah, 2018).

Group counselling approaches must account for FELDA's closed community dynamics different from urban interventions. The community structure means group interventions may have amplified peer effects requiring careful participant selection and community buy-in strategies unnecessary in urban contexts. Academic interventions face unique implementation challenges including transportation limitations, limited facilities, and competing family economic demands, requiring community-integrated approaches working with rather than against plantation life patterns. Rural schools similarly face resource constraints including insufficient healthy food options, limited physical education equipment, and difficulty retaining qualified staff, but benefit from stronger traditional community governance structures (JKKK, MPKK) that can support intervention implementation (Mohamad et al., 2021; Seng et al., 2018).

Overall, these findings indicate that intervention strategies in FELDA cannot simply adopt generic models used in urban schools but must be adapted to the local ecological and cultural setting. Evidence from international rural contexts shows that community-based and culturally grounded approaches are more effective than standardised programs. In FELDA, strong religious and cultural foundations provide a basis for effective interventions, but success depends on integrating them with plantation life patterns and leveraging local governance structures. This highlights the importance of designing interventions that are both contextually relevant and community-driven (Mohamed Salleh & Bauer, 2018; Ahmad Puat & Abdullah, 2018; Mohamad et al., 2021).

CONCLUSION AND FUTURE RESEARCH

This systematic literature review successfully achieved its objectives of identifying the characteristics of students with disciplinary problems in FELDA settlements and examining the contributing factors to inform intervention strategies. Through thematic analysis of ten studies published between 2006 and 2022, three main themes were developed. These include the characteristics of FELDA students with disciplinary problems, contributing factors, and intervention strategies or protective mechanisms. While these findings provide preliminary insights into the challenges faced by FELDA adolescents, they should not be interpreted as a comprehensive understanding due to the small number of studies synthesised. The review findings show that FELDA adolescents have a distinct risk profile. Many of them begin engaging in disciplinary behaviours at an early age, particularly male students, who consistently show higher rates of infractions. In addition, many students do not show isolated problems but experience multiple overlapping issues such as smoking, truancy, and academic failure.

These findings suggest that problem clustering is a key concern in FELDA settlements. Several contributing factors were identified. Family and peer influences are key contributors, often amplified by the structural characteristics of FELDA settlements, including dependence on the palm oil economy and geographic isolation. Poverty and limited access to alternative role models and educational resources further intensify these pressures, creating a unique context that differs from urban and other rural areas. The review also highlights several promising intervention strategies. Religious-based programs incorporating life purpose, Quranic reflection, and stress management modules were culturally relevant and effective. Group counselling, academic support, and strong family and peer relationships also appear protective, particularly in resource-limited settings.

Despite the valuable insights, this review acknowledges several limitations. Most studies relied on cross-sectional designs, which do not allow for conclusions about cause and effect. Only two studies used qualitative methods, limiting the understanding

of students lived experiences. Some studies had small sample sizes or were conducted in only a few states, especially Johor and Pahang, which limits generalisation to other FELDA areas. There were also inconsistencies in theoretical frameworks and definitions of disciplinary problems. Furthermore, few intervention studies included control groups or long-term follow-up. Future research should address these gaps by conducting longitudinal FELDA cohort studies to explore how disciplinary problems develop over time. More qualitative and mixed-methods studies are needed to provide deeper insights into students' psychosocial experiences. Comparative studies with other rural and urban populations would help identify context-specific needs.

Topics such as digital connectivity, intergenerational education gaps, and community level intervention strategies also deserve further exploration. For instance, research should explore how digital platforms and social media influence peer relationships and behavioural patterns among FELDA adolescents, particularly given their geographic isolation. For instance, research should explore how digital platforms and social media influence peer relationships and behavioural patterns (Kabilan & Zahar, 2016) among FELDA adolescents, particularly given their geographic isolation. Gender-specific studies are also important, especially those focused on female adolescents who may exhibit different types of risk or resilience. Finally, intervention research should test the long-term effectiveness and cost-efficiency of different approaches.

This review offers practical contributions for multiple stakeholders. Educators and school counsellors can use these findings to identify high-risk students and design appropriate school-based support. Policymakers gain evidence to guide the development of FELDA focused education and youth policies. FELDA communities benefit from a clearer understanding of the behavioural challenges facing their youth. Researchers are provided with a foundation for future studies, and non-governmental organisations can use these insights to improve community programmes. Health professionals can also enhance their screening and support strategies by understanding the behavioural patterns highlighted in this review. In summary, this review provides a strong starting point for improving support for adolescents in FELDA settlements. It contributes to the broader understanding of how rural development communities face unique challenges and offers evidence-based strategies to support adolescent well-being and discipline.

CONFLICT OF INTEREST

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

DATA AVAILABILITY

The datasets generated and/or analysed during the current study are available from the corresponding author on reasonable request.

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CONTRIBUTIONS OF AUTHORS

All authors contributed equally to the conception of the manuscript, data acquisition as well as analysis, drafting, and critical revisions and gave approval on the final draft. They agreed to be accountable for all aspects of work ensuring integrity and accuracy.

ARTIFICIAL INTELLIGENCE (AI) USE STATEMENT

The authors used ChatGPT (OpenAI, GPT-5) as a digital writing assistant to help clarify conceptual linkages, refine the structure of arguments, and improve linguistic coherence. The final synthesis, interpretations, and arguments reflect the authors' own scholarly reasoning and critical judgement.

The authors employed ChatGPT (OpenAI, GPT-5) to facilitate iterative reflection and refinement of analytical categories. The AI tool functioned as a dialogic interlocutor to support critical thinking and meta-reflexivity, consistent with the study's methodological framework. All interpretations and conclusions were made by the authors.

The use of artificial intelligence in this manuscript complied with the journal's ethical guidelines. ChatGPT (OpenAI, GPT-5) was utilised for linguistic refinement and preliminary idea development under the direct supervision of the authors. No generative content was included without human verification, and the authors bear sole responsibility for the accuracy and integrity of the work.

In accordance with ethical publication standards, artificial intelligence tools were used only to enhance readability and clarity. The substantive intellectual contribution, including conceptualisation, data analysis, and interpretation, was entirely human-authored.

REFERENCES

- Abdul Rashid, M. F., Mokhtar, S., Kamaruddin, S. M., Abdullah Kamar, M. A., Abdullah, S., & Ali, M. A. F. (2022). Felda lands development based on sustainability and highest-best use approach: How to go about it? *Planning Malaysia*, 20(2), 207–220. <https://doi.org/10.21837/pm.v20i21.1106>
- Abdullah, M. A., Syed Salim, S. S., & Mohamed Arip, M. A. S. (2018). Factors that influenced the problem of truancy among secondary school students. *International Journal of Academic Research in Business and Social Sciences*, 8(3), 363–373. <https://doi.org/10.6007/IJARBS/v8-i3/3934>
- Ahmad Puat, N. D., & Abdullah, B. (2018). [Construction of FELDA youth identity through dakwah activities of Islamic organizations] Pembinaan jati diri remaja Felda melalui aktiviti dakwah organisasi Islam. *Jurnal Islam dan Masyarakat Kontemporari*, 18(1), 52–63. <https://doi.org/10.37231/jmk.2018.18.1.298>
- Arifain, S. M. K., Mokhtar, M. Y. O., Yusof, F., & Abdullah, N. (2024). Konsep sendiri dan kesejahteraan psikologi remaja delinkuen di sekolah-sekolah tunas bakti, Semenanjung Malaysia. *Jurnal Ulwan*, 9(1), 241–256.
- Arshat, Z. (2010). Effects of family strength on social competence, self-esteem and academic achievement of second-generation Felda settlers' children. <http://psasir.upm.edu.my/id/eprint/22017/1/FEM%202010%2011R.pdf>
- Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, 11(4), 589–597. <https://doi.org/10.1080/2159676X.2019.1628806>
- Fakhrudin, F. M., Mahfar, M., Fakhrudin, F. M., Mohd Noor, N. A., Abd. Hamid, M. A., Abdull Rahman, R. H., & Rusbadrol, N. (2023). Patterns and factors of intergenerational social mobility by education: A case of Malay agricultural community in FELDA Trolak Utara, Perak, Malaysia. *International Journal of Academic Research in Business & Social Sciences*, 13(6), 20–41. <https://doi.org/10.6007/ijarbss/v13-i6/17369>
- Flemming, K., Booth, A., Garside, R., Tunçalp, Ö., & Noyes, J. (2019). Qualitative evidence synthesis for complex interventions and guideline development: Clarification of the purpose, designs and relevant methods. *BMJ Global Health*, 4(Suppl. 1), e000882. <https://doi.org/10.1136/bmjgh-2018-000882>
- Galán-Arroyo, C., Gómez-Paniagua, S., Contreras-Barraza, N., Adsuar, J. C., Olivares, P. R., & Rojo-Ramos, J. (2023). Bullying and self-concept, factors affecting the mental health of school adolescents. *Healthcare*, 11(15), 2214. <https://doi.org/10.3390/healthcare11152214>
- Hasani, W. S. R., Miaw Yn, J. L., Saminathan, T. A., Robert Lourdes, T. G., Ramly, R., Abd Hamid, H. A., Ismail, H., Abd Majid, N. L., Mat Rifin, H., Awaluddin, S. M., & Mohd Yusoff, M. F. (2019). Risk factors for illicit drug use among Malaysian male adolescents. *Asia-Pacific Journal of Public Health*, 31(8_suppl.), 48S56S. <https://doi.org/10.1177/1010539519865053>
- Hashim, B. M., Hamid, A. A., Abdullah, M. S., Alias, R., & Sarina, M. N. (2009). Socio-economic issues among Felda settlers in Perlis. *Asian Culture and History*, 1(2), 113–117. <https://doi.org/10.5539/ach.v1n2p113>
- Hassan, J., Rashid, S. A., Sufahani, S. F., & Aziz, M. K. N. A. (2016). Buli di kalangan pelajar sekolah rendah luar bandar: Kajian kes di kawasan Felda utara Kedah- Perlis, Malaysia (Bully among rural primary school students: A case study of north Kedah Perlis Felda territory, Malaysia). *Jurnal Psikologi Malaysia*, 30(1), 113–125. <https://spaj.ukm.my/ppppm/jpm/article/view/180/180>
- Hisham, N. A., Zaleha, K., & Sahari, N. (2010). Social problems and its relationship with family institution in Felda settlements: The local perspective. *European Journal of Social Sciences*, 14(3), 369–386. http://irep.iium.edu.my/4667/1/4667_cZalehaejss_14_3_03.pdf

- Hock, L. K., Li, L. H., Mohd Ghazali, S., Ling, C. Y., Cheong, K. C., Heng, P. P., Teh, C. H., Tan, C. V., Mohd Hazilas, M. H., Cheah, Y. K., & Lim, J. H. (2021). Influences of parents and peers on adolescent smoking initiation: Findings from a longitudinal study in Kota Tinggi district, Johor, Malaysia. *Malaysian Journal of Public Health Medicine*, 21(2), 14–21. <https://doi.org/10.37268/mjphm/vol.21/no.2/art.620>
- Hong, Q. N., Fàbregues, S., Bartlett, G., Boardman, F., Cargo, M., Dagenais, P., Gagnon, M. -P., Griffiths, F., Nicolau, B., O' Cathain, A., Rousseau, M. -C., Vedel, I., & Pluye, P. (2018). The mixed methods appraisal tool (MMAT) version 2018 for information professionals and researchers. *Education for Information*, 34(4), 285–291. <https://doi.org/10.3233/EFI-180221>
- Ibrahim, F., Jaafar, J. R., Chong, S. T., & Choon, D. (2017). Perbandingan tingkah laku sosial berdasarkan gender antara generasi muda tinggal di kawasan terpinggir dan arus perdana di Malaysia (Comparative social behavior based on gender between marginalised and mainstream millennials in Malaysia). *Jurnal Psikologi Malaysia*, 31(2), 1–11. <https://spaj.ukm.my/ppppm/jpm/article/view/279/230>
- Justine, M., Nawawi, A., & Ishak, A. (2020). Strength and mobility of older adults living in urban, rural, and FELDA settlements in Malaysia. *Asian Journal of Gerontology and Geriatrics*, 15(1), 23–28. <https://doi.org/10.12809/ajgg-2019-369-0a>
- Kabilan, M. K., & Zahar, T. Z. M. E. (2016). Enhancing students' vocabulary knowledge using the Facebook environment. *Indonesian Journal of Applied Linguistics*, 5(2), 217. <https://doi.org/10.17509/ijal.v5i2.1346>
- Khalid, N. F., Ahmad, N. S., Syed Abdullah, S. M., & Mohd Sahell, A. M. (2025). Utilizing the fuzzy Delphi method to identify key factors influencing disciplinary problems among secondary students. *Environment-Behaviour Proceedings Journal*, 10(SI24), 25–31. <https://doi.org/10.21834/e-bpj.v10isi24.6354>
- Kiger, M. E., & Varpio, L. (2020). Thematic analysis of qualitative data: AMEE Guide no. 131. *Medical Teacher*, 42(8), 846–854. <https://doi.org/10.1080/0142159X.2020.1755030>
- Lim, H. K., Teh, H. C., Lim, L. H., Lau, J. K., Kee, C. C., Ghazali, S. M., Chan, Y. Y., Sabtu, M. Y., Ismail, H., Zaki, N. A. M., Thomas, L. T., Lim, K. K., Cheong, S., Ibrahim, N., & Yusoff, M. F. M. (2015). Smoking among secondary school students in Kota Tinggi, Johor, Malaysia: Findings from a cross-sectional study. *Asian Pacific Journal of Cancer Prevention*, 16(11), 4563–4570. <https://doi.org/10.7314/apjcp.2015.16.11.4563>
- Lim, K. H., Amal, N. M., Hanjeet, K., Mashod, M. Y., Wan Rozita, W. M., Sumarni, M. G., & Hadzrik, N. O. (2006). Prevalence and factors related to smoking among secondary school students in Kota Tinggi District, Johor, Malaysia. *Tropical Biomedicine*, 23(1), 75–84.
- Mak Din, H. A., Hassan, N. A., Mohd Noor, M., & Anas, N. (2020). Role of structural factor in Felda developmental model. *Journal of Critical Reviews*, 7(8), 923–926.
- Mohamad, M. S., Mahadir Naidu, B., Kaltiala, R., Virtanen, S. M., & Lehtinen-Jacks, S. (2021). Thinness, overweight and obesity among 6- to 17-year-old Malaysians: Secular trends and sociodemographic determinants from 2006 to 2015. *Public Health Nutrition*, 24(18), 6309–6322. <https://doi.org/10.1017/s1368980021003190>
- Mohamed Salleh, S., & Bauer, T. A. (2018). Meaning making: Examining Malay adolescents' media text decoding process in constructing cultural identity. *Jurnal Komunikasi: Malaysian Journal of Communication*, 34(4), 186–197. <https://doi.org/10.17576/JKMJC-2018-3404-11>
- Mohammad, T., & Nooraini, I. (2021). Routine activity theory and juvenile delinquency: The roles of peers and family monitoring among Malaysian adolescents. *Children and Youth Services Review*, 121, 105795. <https://doi.org/10.1016/j.chidyouth.2020.105795>
- Mohd Afandi, N. H., Amran, N. N., & Mohd Saad, M. F. (2021). Program pemulihan berasaskan Manhaj Rabbani bagi remaja berisiko di daerah Bentong. *Journal of Islamic, Social, Economics and Development*, 6(41), 97–117. <https://academicinspired.com/jised/article/view/1312>

- Mohd Nasir, M. A., & Tahrir Adli, A. H. (2023). The relationship between family communication pattern and youth self-concept in rural Malaysia. *Jurnal Pembangunan Sosial*, 26, 49–69. <https://doi.org/10.32890/jps2023.26.3>
- Mohd Radzi, N. A., Saub, R., Mohd Yusof, Z. Y., Dahlui, M., & Sujak, S. L. (2021). Nicotine dependence among adolescents single and dual cigarette users. *Children*, 8(2), 144. <https://doi.org/10.3390/children8020144>
- Mohd Radzi, N. A., Saub, R., Mohd Yusof, Z. Y., Maznah, D., & Sharol Lail, S. (2022). Socio-demographic characteristics of Malaysian adolescent smokers. *Southeast Asian Journal of Tropical Medicine and Public Health*, 53(2), 173–191.
- Ngadiman, D. W. T., Rahim, H. A., Yacoob, S. E., & Wahid, H. (2018). Hubungan antara harga diri, niat menambah hutang dan gelagat perbelanjaan hutang dalam kalangan individu berpendapatan rendah (The relationship between self-esteem, intention to increase debt and debt spending behaviour of low-income people). *Geografia- Malaysian Journal of Society and Space*, 14(4), 188–200. <https://ejournals.ukm.my/gmjss/article/view/25430>
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., & McGuinness, L. A. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *British Medical Journal*, 372(71), 1–9. <https://doi.org/10.1136/bmj.n71>
- Radzak, S. A., Noor, A. M., Azlina Khir, A. M., & Azizul, M. D. A. (2023). Analisis faktor dominan terhadap tingkah laku pelajar sekolah menengah di Selangor. *Jurnal Kemanusiaan*, 21(2), 1–8. <https://doi.org/10.11113/jur.kemanusiaan.v21.445>
- Seng, W. J., Nooi, P. S., & Khalil, S. (2018). Growth, modernization and management of new villages and their community in Malaysia. *International Journal of Social Science and Economic Research*, 3(3), 802–815. <https://ijsser.org/more2018.php?id=56>
- Tahir, N. A., Mohamed, N. H., & Dasan, N. (2021). Penyalahgunaan ketum dalam kalangan remaja Felda: Satu kajian di Perlis. *Southeast Asia Psychology Journal*, 9(1), 38–57.
- Talib, N. A. F., & Kutty, F. M. (2022). Ikatan keibubapaan dan perapatan rakan sebaya terhadap kesejahteraan psikologi belia Felda Chini, Pahang. *Malaysian Journal of Social Sciences and Humanities (MJSSH)*, 7(4), e001449. <https://doi.org/10.47405/mjssh.v7i4.1449>
- Talin, R., Sharif, S., Bikar Singh, S. S., & Kiok, P. (2021). Parenting styles of the Kadazan Dusun community in rural areas of Sabah in ensuring child's success in school. *Malaysian Journal of Social Sciences and Humanities (MJSSH)*, 6(6), 265–275. <https://doi.org/10.47405/mjssh.v6i6.830>
- Teh, C. H., Teh, M. W., Lim, K. H., Kee, C. C., Sumarni, M. G., Heng, P. P., Mohd Zahari, T. H., Chan, Y. Y., Nuur Hafiza, M. I., Tee, E. O., & Fadzilah, K. (2019). Clustering of lifestyle risk behaviours and its determinants among school-going adolescents in a middle-income country: A cross-sectional study. *BMC Public Health*, 19(1), 1177. <https://doi.org/10.1186/s12889-019-7516-4>
- Whittemore, R., & Knafl, K. (2005). The integrative review: Updated methodology. *Journal of Advanced Nursing*, 52(5), 546–553. <https://doi.org/10.1111/j.1365-2648.2005.03621.x>
- Yahaya, A., Ramli, J., Boon, Y., Najib, M., Ghaffar, A., & Zakariya, Z. (2009). The relationship between dimensions of personality, self-concept and family influence on students in the Felda scheme in Johore Malaysia. *European Journal of Social Sciences*, 11(2), 289–301.
- Yang, S. L., Tan, C. X., Li, J., Zhang, J., Chen, Y. P., Li, Y. F., Tao, Y. X., Ye, B. Y., Chen, S. H., Li, H. Y., & Zhang, J. P. (2023). Negative life events and aggression among Chinese rural left-behind adolescents: Do self-esteem and resilience mediate the relationship? *BMC Psychiatry*, 23(1), 167. <https://doi.org/10.1186/s12888-023-04587-1>
- Zolkainain, N. S., & Yusof, F. (2020). Hubungan kasih sayang ibu bapa dengan tingkah laku delinkuen pelajar tingkatan tiga Sekolah Menengah Kebangsaan Sultan Alauddin, Masjid Tanah, Melaka. *Jurnal Sains Sosial*, 5(1), 25–32.