

Research Article

Family-Related Stress, Perceived Family Help-Seeking Availability, and Suicide-Related Events in Adolescents with Adjustment Disorder: A Cross-Sectional Study in Japan

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Background: Adjustment disorder (AD) is frequently diagnosed among adolescents presenting with suicide-related events; however, the roles of family-related stress and perceived availability of family as a help-seeking resource remain unclear within this population. This study examined whether family-related stress and limited perceived access to family support were associated with suicide-related events among adolescents with AD.

Methods: This cross-sectional study included 314 adolescents diagnosed with AD at two specialized outpatient clinics in Japan. Suicide-related events were assessed using two yes/no self-report items referring to suicide planning and suicide attempts within the past two weeks. Logistic regression analyses were conducted adjusting for age, sex, and depressive symptoms (PHQ-9). Multiple imputation under the missing-at-random assumption was applied to predictor variables; participants with missing outcome data were excluded from regression analyses.

Results: Adolescents reporting both family-related stress and unavailability of family as a help-seeking resource exhibited the highest odds of suicide-related events. Perceived availability of family support was consistently associated with lower odds across models, even after adjusting for non-family stressors and non-family help-seeking sources.

Conclusions: Among adolescents with AD, suicide-related risk was more consistently associated with perceived inaccessibility of family support than with family-related stress alone. Suicide risk assessment should therefore evaluate not only stress exposure but also whether adolescents perceive family members as accessible sources of support.

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Introduction

Youth suicide remains a pressing public health concern in Japan. Since the onset of the COVID-19 pandemic, suicide rates among adolescents have increased and remained persistently high, in contrast to the overall decline observed in the general population^[1]. Research examining suicide trends during the pandemic has identified multiple contributing factors, including family-related problems, social concerns, academic stress, and mental health difficulties^[2]. Such multifactorial psychosocial stressors are conceptually aligned with adjustment disorder (AD), which is defined as the development of emotional or behavioral symptoms in response to identifiable stressors resulting in clinically significant distress or impairment (American Psychiatric Association, 2022).

Among environmental stressors, family-related problems have repeatedly been highlighted as an important context for adolescent suicide in Japan. National data indicate that family-related motives account for a substantial proportion of suicides among junior and senior high school students^[1]. Clinical studies of adolescent suicide attempters in Japan have similarly reported high frequencies of family-related psychosocial stressors^{[3][4]}. Although family relationships often function as primary sources of emotional support during adolescence^{[5][6]}, they may simultaneously represent significant sources of distress. Family disharmony has been associated with increased psychological stress and suicidal behavior among adolescents^[7]. Furthermore, a large-scale cohort study conducted in recent years of Japanese adolescents has revealed that, in the case of adolescents at high risk of suicide, caregivers may fail to adequately recognize psychiatric symptoms and psychological distress, potentially limiting opportunities for help-seeking within the family^[8].

International evidence further underscores the relevance of stress-related disorders in suicidal populations. A systematic review of patients presenting with suicidal behaviors in general medical settings reported that adjustment disorder is frequently diagnosed among individuals engaging in self-

harm and suicide attempts^[9]. In Japan, longitudinal research of serious suicide attempters admitted to critical care units found that reactions to stress and other stress-related disorders constituted a notable proportion of psychiatric diagnoses^[10]. These findings collectively suggest that stress-related psychiatric conditions are clinically prominent among suicidal individuals. However, little is known about which specific contextual or relational factors differentiate suicide-related risk within adolescents diagnosed with AD.

To our knowledge, the intersection of family-related stress and perceived availability of family as a help-seeking resource has not been systematically examined among adolescents diagnosed with AD. This study therefore aimed to investigate the association between family-related stress, the availability of family as a help-seeking resource, and suicide-related events in adolescents with adjustment disorder. We hypothesized that the combination of family-related stress and the inability to seek help from family would confer the highest risk of suicide-related events. In addition, we explored whether access to non-family help-seeking availability (e.g., friends, teachers, counselors) buffered risk among adolescents experiencing family-related stress.

Methods

Participants

This cross-sectional study was conducted at two specialized child and adolescent psychiatry outpatient clinics: Yokohama City University Hospital (ages 10–18 years) and Yokohama City University Medical Center (ages 10–15 years). A total of 333 adolescents diagnosed with adjustment disorder according to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), who visited these clinics between April 2016 and March 2022, were initially included.

Participants with missing data on the primary outcome (suicide-related events, SRE) were excluded from regression analyses to avoid reliance on additional and potentially unverifiable modeling assumptions required for imputing the outcome. Accordingly, the estimand of this study represents the association between predictors and suicide-related events among adolescents with observed SRE status.

Missing data in predictor variables (stressors, help-seeking, depression symptoms) were handled using multiple imputations under the missing-at-random (MAR) assumption. Multiple imputation by chained equations (MICE) was used to impute missing values for family-related stress, family help-seeking availability, non-family stress, non-family help-seeking availability, age, sex, and depression symptoms.

Measures

Suicide-Related Events (SREs)

Suicide-related events were assessed using two binary (yes/no) items administered alongside the PHQ-9 and stress-related questions, referring to the preceding two weeks. Participants were asked whether, during the preceding two weeks, they had (1) thought about a plan to die by suicide and (2) acted on such a plan. Participants who endorsed either item were classified as having experienced a suicide-related event. Although these items capture recent suicide planning and behavior, they do not constitute a full structured assessment such as the Columbia–Suicide Severity Rating Scale (C-SSRS). Therefore, SREs in this study represent a brief questionnaire-based indicator of recent suicide-related risk in an outpatient setting. Participants were classified as having an SRE if they endorsed either item.

Stressors and Help-Seeking Resources

Participants were asked to respond to two multiple-response checkbox items: (1) “What has particularly troubled you recently? (circle all that apply)” and response options for items included family, friends, school, study, club activities, and others. In this questionnaire, “school” referred to stress related to the school environment (e.g., teachers or school life), whereas “study” referred specifically to academic workload or learning-related difficulties. (2) “Is there anyone around you whom you can talk to about your problems? (circle all that apply).” and response options for items included family, friends, schoolteachers, boyfriend/girlfriend, psychological counselor, and others.

Because multiple-response items do not distinguish between true non-endorsement and unintentional omission, responses were considered valid when at least one option was endorsed within each item. When no options were endorsed for a given item, the response set was treated as missing for that domain. Such cases were handled as missing data in subsequent analyses.

Family-related stress was defined based on participants’ self-reported recent sources of difficulty over the past two weeks. Those who indicated family-related problems were coded as having family-related stress.

Perceived availability of family as a help-seeking resource was assessed by asking participants whether they had someone they could consult regarding their current difficulties. Those who identified family members were coded as having family help-seeking availability.

Non-family stress and non-family help-seeking availability were defined analogously based on endorsement of non-family categories (e.g., friends, teachers, counselors).

Covariates

We included age, sex, and depressive symptoms as covariates because these variables are known to be associated with suicide-related behaviors in adolescents and may confound the relationship between psychosocial stressors and suicide-related events. Depressive symptoms were assessed using the Japanese version of the Patient Health Questionnaire-9 (PHQ-9). PHQ-9 total scores were treated as a continuous variable in the regression analyses to adjust for depressive symptom severity. Demographic information was obtained from medical records.

Statistical Analysis

Descriptive statistics were used to summarize demographic and clinical characteristics. Continuous variables are presented as means and standard deviations, and categorical variables as frequencies and proportions. Descriptive characteristics are reported for patients who completed all questionnaire items (n = 226).

The primary outcome was the presence of suicide-related events (SRE), defined as endorsement of either suicide planning or suicide attempts. Logistic regression analyses were conducted to examine the association between family-related stress, family help-seeking availability, and SRE. The regression models focused on family-related stress and help-seeking variables. All predictor variables included in the regression models comprised family-related stress, family help-seeking availability, non-family stress, non-family help-seeking availability, age, sex, and PHQ-9 score.

Four logistic regression models were specified a priori. Model 1 examined the main effects of family-related stress (yes/no) and family help-seeking availability (available vs unavailable), adjusting for age, sex, and PHQ-9 score. Model 2 categorized participants into four mutually exclusive groups based on combinations of family-related stress and family help-seeking availability (no stress/help available; no stress/help unavailable; stress/help available; stress/help unavailable), using the no stress/help available group as the reference. Model 3 additionally included an interaction term (family-related stress × family help-seeking unavailability) to formally test effect modification. To explore whether help-seeking resources outside the family modified the association between family-related stress and suicide-related events, Model 4 examined the main effect of non-family help-seeking availability and its interaction

with family-related stress. Age, sex, and depressive symptoms (PHQ-9 score) were included as covariates in all models because they are well-established correlates of adolescent suicidal behaviors and may confound the association between psychosocial stressors and suicide-related events.

The linear predictors for the logistic regression models were specified as follows:

- Model 1: $\text{logit}(P(\text{SRE})) = \beta_0 + \beta_1(\text{Age}) + \beta_2(\text{Sex}) + \beta_3(\text{PHQ-9 score}) + \beta_4(\text{Family stress}) + \beta_5(\text{Family help-seeking availability})$
- Model 2: $\text{logit}(P(\text{SRE})) = \beta_0 + \beta_1(\text{Age}) + \beta_2(\text{Sex}) + \beta_3(\text{PHQ-9 score}) + \beta_4(\text{No stress \& help unavailable}) + \beta_5(\text{Stress \& help available}) + \beta_6(\text{Stress \& help unavailable})$
- Model 3: $\text{logit}(P(\text{SRE})) = \beta_0 + \beta_1(\text{Age}) + \beta_2(\text{Sex}) + \beta_3(\text{PHQ-9 score}) + \beta_4(\text{Family stress}) + \beta_5(\text{Family help-seeking availability}) + \beta_6(\text{Family stress} \times \text{Family help-seeking availability})$
- Model 4: $\text{logit}(P(\text{SRE})) = \beta_0 + \beta_1(\text{Age}) + \beta_2(\text{Sex}) + \beta_3(\text{PHQ-9 score}) + \beta_4(\text{Family stress}) + \beta_5(\text{Non-family help-seeking availability}) + \beta_6(\text{Family stress} \times \text{non-family help-seeking availability})$

The primary analysis was planned using multiple imputation under the missing-at-random (MAR) assumption for predictor variables. Multiple imputation by chained equations (MICE) was used to impute missing values in predictor variables (family-related stress, family help-seeking availability, non-family stress, non-family help-seeking availability, age, sex, and PHQ-9 score). The imputation model included all predictors used in the analytic models. Imputed datasets were analyzed using the above regression models and pooled to obtain adjusted odds ratios (aORs) with 95% confidence intervals (CIs). Twenty imputed datasets were generated and combined using Rubin's rules. A complete-case analysis among patients with completed questionnaires (n = 226) was conducted as a sensitivity analysis. All tests were two-sided with statistical significance set at $p < .05$.

All analyses were performed using R (version 4.5.2; R Foundation for Statistical Computing, Vienna, Austria). Multiple imputation was conducted using the 'mice' package (version 3.19.0) with the level of significance set at $\alpha = 0.05$.

Ethical Considerations

This study was approved by the Institutional Review Board of Yokohama City University (approval number: F220400053). Written informed consent was obtained from all participants and their guardians.

Results

Patient flow and characteristics

Figure 1 presents the flow diagram of participant selection. Among 333 adolescents diagnosed with adjustment disorder, 19 were excluded due to missing responses regarding suicide-related events, leaving 314 participants for the primary analysis. Among these participants, 88 had missing responses for at least one predictor variable (stressors, help-seeking, depression symptoms).

Table 1 summarizes the demographic and clinical characteristics of adolescents with adjustment disorder who completed all questionnaire items. Family-related stress was reported by a substantial proportion of participants. Adolescents reporting family-related stress showed higher depressive symptom severity and a higher prevalence of suicide-related events compared with those without family-related stress, while basic demographic characteristics were broadly comparable between groups.

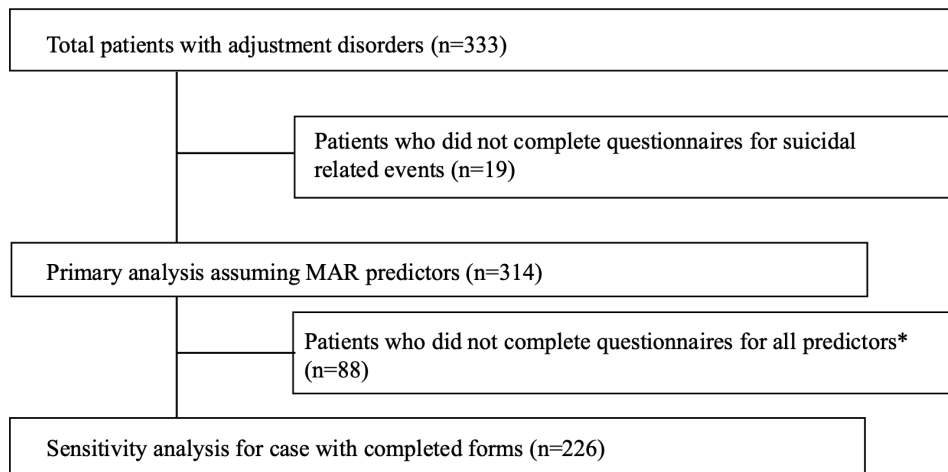
Patterns of missingness among predictor variables are shown in Supplemental Figure S1. Missing data was most frequently observed in help-seeking variables, whereas other predictors showed relatively low proportions of missingness.

Total (N=226)		Patients reporting stressors related to family (n=64)		Patients not reporting stressors related to family (n=162)	
		Any help from family (n=35)	Less help from family (n=29)	Any help from family (n=101)	Less help from family (n=61)
Variables	mean (SD), n(%)				
Age	13.2 (2.1)	13.1 (2.0)	14.1 (1.9)	13.0 (2.2)	13.0 (2.0)
Boys	106 (46.9)	11 (31.4)	9 (31.0)	55 (54.5)	31 (50.8)
Living with parents	174 (77.7)	25 (71.4)	23 (79.3)	79 (79.0)	47 (78.3)
Experience of child abuse	43 (19.2)	11 (31.4)	9 (31.0)	9 (9.1)	14 (23.0)
Ongoing experience of child abuse	10(17.5)	3(8.6)	6(20.7)	0(0)	1(1.6)
Depressive symptoms (PHQ-9)	10.8 (6.1)	11.1 (5.6)	14.9 (6.2)	9.3 (5.4)	11.3 (6.7)
Patients with suicide plannings	63(27.9)	11(31.4)	19(65.5)	12(11.9)	21(34.4)
Patients with suicide attempts	21(9.3)	1(2.9)	5(17.2)	7(6.9)	8(13.1)
Sterssors related to other than families	208(92.0)	28(80.0)	26(89.7)	96(95.1)	58(95.1)
related to friends	84 (37.2)	13 (37.2)	15 (51.7)	34 (33.7)	22 (36.1)
related to school	130 (57.5)	20 (57.1)	22 (75.9)	59 (58.4)	29 (47.5)
related to studies	116 (51.3)	19 (54.3)	17 (58.6)	57 (56.4)	23 (37.7)
related to club activities	29 (12.8)	5 (14.3)	5 (17.2)	11 (10.9)	8 (13.1)
others	32 (14.2)	4 (11.4)	3 (10.4)	14 (13.9)	11 (18.0)
Any help from other than families	143(63.3)	19(54.3)	24(82.8)	56(55.5)	44(72.1)

Total (N=226)		Patients reporting stressors related to family (n=64)		Patients not reporting stressors related to family (n=162)	
		Any help from family (n=35)	Less help from family (n=29)	Any help from family (n=101)	Less help from family (n=61)
from friends	85 (37.6)	11 (31.4)	16 (55.2)	31 (30.7)	27 (44.3)
from teachers	56 (24.8)	11 (31.4)	8 (27.6)	26 (25.7)	11 (18.0)
from partners	3 (1.3)	1 (2.9)	1 (3.5)	1 (1.0)	0 (0)
from counselors	43 (19.0)	5 (14.3)	6 (20.7)	20 (19.8)	12 (19.7)
others	11 (4.9)	2 (5.7)	2 (6.9)	1 (1.0)	6 (9.8)

Table 1. Demographic characteristics for clinical samples

Values are mean (SD) or n (%). Characteristics are shown for patients who completed all questionnaire items.



* patients without valid responses to the stressor, help-seeking, and depression
MAR: missing at random

Figure 1. Flow diagram of the samples analyzed

Given these descriptive differences, multivariable logistic regression analyses were conducted to examine whether family-related stress and family help-seeking availability were independently associated with

suicide-related events after adjustment for potential confounders. These descriptive patterns prompted further multivariable analyses to evaluate the independent and combined associations of family-related stress and family help-seeking availability with suicide-related events.

Association between family-related stress, family help-seeking availability, and suicide-related events

Table 2 presents the results of the primary logistic regression analyses examining the association between family-related stress, family help-seeking availability, and suicide-related events using multiply imputed data under the missing-at-random assumption.

Variable	Model 1 aOR (95% CI)	p	Model 2 aOR (95% CI)	p	Model 3 aOR (95% CI)	p	Model 4 aOR (95% CI)	p
Family-related stress (Yes vs No)	2.6(1.3–5.1)	0.007	—	—	2.3 (0.8–6.3)	0.12	1.1 (0.3–3.9)	0.87
Family help-seeking available (vs unavailable)	0.3(0.2–0.6)	0.001	—	—	0.3 (0.1–0.7)	0.004	—	—
No stress & help available	—	—	1.00 (ref)	—	—	—	—	—
No stress & help unavailable	—	—	3.5 (1.5–8.3)	0.004	—	—	—	—
Stress & help available	—	—	2.9 (1.1–7.6)	0.03	—	—	—	—
Stress & help unavailable	—	—	7.9 (2.8–22.3)	0.0001	—	—	—	—
Stress × help available	—	—	—	—	1.3 (0.3–5.4)	0.73	—	—
Non-Family help-seeking available (vs unavailable)							0.6 (0.3–1.5)	0.28
Family-related stress × Non-Family help available							3.2 (0.7–15.0)	0.14

Table 2. Association between family-related stress, family help-seeking availability, and suicide-related events (primary analysis; n = 314)

aOR = adjusted odds ratio; CI = confidence interval.

All models adjusted for age, sex, and PHQ-9 score.

Estimates were pooled across 20 multiply imputed datasets using fully conditional specification under the missing-at-random assumption for predictors.

Reference group for Model 2: No family-related stress & family help-seeking available.

In Model 1, family-related stress was associated with increased odds of suicide-related events (adjusted odds ratio [aOR] = 2.6, 95% confidence interval [CI] 1.3–5.1). In Model 1, availability of family as a help-seeking resource was associated with lower odds of suicide-related events (aOR = 0.3, 95% CI 0.2–0.6), after adjustment for age, sex, and depressive symptoms. The interaction between family-related stress and family help-seeking availability was not statistically significant in Model 3 (aOR = 1.3, 95% CI 0.3–5.4), providing no clear evidence of effect modification.

In Model 2, adolescents who experienced family-related stress and reported that family help-seeking was unavailable exhibited the highest odds of suicide-related events compared with those reporting no family-related stress and available family help-seeking (aOR = 7.9, 95% CI 2.8–22.3). Elevated odds were also observed among adolescents with family-related stress even when family help-seeking was available (aOR = 2.9, 95% CI 1.1–7.6).

In Model 4, which examined the availability of non-family help-seeking resources, neither family-related stress (aOR = 1.1, 95% CI 0.3–3.9), availability of non-family help-seeking availability (aOR = 0.6, 95% CI 0.3–1.5), nor their interaction term (aOR = 3.2, 95% CI 0.7–15.0) showed statistically significant associations with suicide-related events.

Sensitivity and robustness analyses

Results from the complete-case analysis restricted to participants who completed all questionnaire items were consistent with those of the primary analysis (Supplementary Table S1). The direction and relative magnitude of the associations between family-related stress, family help-seeking availability, and suicide-related events were similar to those observed in the primary analysis. The interaction term between family-related stress and family help-seeking availability also did not reach statistical significance.

To further examine whether the observed associations were independent of non-family contexts, an additional model adjusting for the presence of any non-family stressor and any non-family help-seeking source was fitted (Supplementary Table S2). After this additional adjustment, the association between family help-seeking availability and suicide-related events remained statistically significant, whereas the association with family-related stress was attenuated. The overall pattern of results supported the robustness of the primary findings.

Discussion

In this study, we examined the associations between family-related stress, family help-seeking availability, and suicide-related events among adolescents with adjustment disorders. Although it is possible that some adolescents with more severe clinical presentations did not complete certain questionnaire items, the primary analyses were conducted under the assumption that missingness could be reasonably approximated as missing at random based on observed clinical covariates. Adolescents who reported both family-related stress and limited family help-seeking availability showed the highest odds of suicide-related events. In contrast, perceived availability of family support was consistently associated with lower odds across models. Although the association between family-related stress and suicide-related events was attenuated after adjustment for non-family stressors, the overall pattern remained directionally consistent. Access to non-family help-seeking sources did not substantially alter this elevated risk pattern. One possible explanation is that although peers, teachers, or counselors may provide emotional support, they may not always be positioned to intervene in family-related stressors that occur within the home environment. As a result, non-family support may be insufficient to offset suicide-related vulnerability when distress is closely tied to family relationships.

A considerable proportion of adolescents with adjustment disorder in our sample reported suicide-related events at their initial outpatient visit, underscoring suicidality as a clinically salient concern in this population. In a Japanese emergency department sample of suicide attempters under 35 years, adjustment disorder accounted for 20% of psychiatric diagnoses, and family-related problems were the most frequently reported precipitating factors^[11]. These findings support the clinical relevance of examining stress-related presentations and family contexts in suicidal youth. Additionally, findings from Japan further underscore the clinical salience of family-related factors in severe presentations. In a single-center inpatient sample of emergency admissions for suicide-related behaviors, adjustment disorder constituted a substantial proportion of diagnoses, and family-related problems were commonly identified as precipitating factors, including documented experiences of psychological abuse^[12]. More recently, a retrospective study of adolescents presenting after suicide attempts found adjustment disorder to be among the most frequently assigned DSM-5 diagnoses in those receiving psychiatric evaluation^[13]. In contrast, the availability of family as a help-seeking resource remained consistently associated with lower odds of suicide-related events even after accounting for non-family stressors and alternative help-

seeking sources. This pattern suggests that perceived accessibility of family support represents a clinically meaningful correlate of suicide-related risk among adolescents with adjustment disorder.

Among adolescents who perceived their family as a source of support, those who reported family-related stress showed higher levels of suicidal ideation and depressive symptoms, but a lower proportion of suicide attempts compared with those whose stressors were unrelated to the family. This pattern suggests that family-related stress may contribute to increased psychological distress and suicidal thoughts, while the concurrent availability of family support may help interrupt the progression from suicidal ideation to suicidal behavior. Prior research indicates that family relationships can influence the transition from suicidal ideation to suicide attempts, with timely recognition of distress and supportive engagement acting as protective factors^[14].

Adolescence is characterized by increasing autonomy within ongoing relational contexts^[15]. Although independence expands during this developmental period, family relationships continue to serve as central contexts for emotional regulation. When adolescents perceive family members as emotionally available, they may benefit from validation and co-regulation during periods of acute stress. Perceived family support has been associated with better emotion regulation and resilience, both of which are linked to lower depressive symptoms and reduced suicidal ideation^{[16][17]}. Within this framework, limited perceived access to family support may contribute to suicide-related vulnerability through heightened emotional reactivity and less adaptive coping in response to stress. Adolescents who lack emotionally accessible family relationships may therefore experience greater dysregulation when confronted with stressors, potentially increasing the likelihood of suicide-related events.

Clinically, in adolescents with adjustment disorder—by definition a stress-related condition—suicide risk assessment should extend beyond identifying the presence of stressors to evaluating whether those stressors can be shared with family members. Our findings suggest that risk may be particularly elevated when family-related stress coexists with limited perceived access to family support. Accordingly, assessing adolescents' perceived ability to seek help within the family context may be as important as documenting the type or number of stressors experienced.

In routine outpatient practice, when family-related stress is identified, clinicians should assess how adolescents perceive their caregivers' emotional responsiveness and whether they feel able to seek help within the family. If help-seeking is limited, it may be clinically important to explore what kind of support the adolescent wishes to receive, even if such support is not currently available. Clarifying these expectations can inform decisions about caregiver involvement, communication-focused interventions,

or gradual restructuring of family interaction patterns. For adolescents who cannot rely on family support due to persistent conflict or relational disruption, clinicians may need to scaffold alternative, stable sources of support while maintaining careful attention to the adolescent's sense of safety and autonomy. In such cases, collaboration with schools and community-based services may help create structured pathways of support that compensate for relational gaps within the family context.

Beyond individual and family-level assessment, these findings may also be considered within a broader psychosocial context. For some adolescents, limited perceived access to family support may reflect longer-standing relational patterns characterized by reduced emotional communication or limited opportunities to seek help during development. Such patterns may not be immediately visible in brief clinical encounters but can function as vulnerabilities that heighten suicide-related risk when acute stressors emerge. Addressing suicide risk in adolescents with adjustment disorder may therefore require attention not only to current stress exposure but also to the relational environments in which help-seeking has developed over time. From a systems perspective, this underscores the importance of coordinated, cross-sector support structures. In Japan, multidisciplinary child and adolescent support frameworks bring together healthcare providers, schools, child welfare agencies, and municipal services to monitor and support vulnerable youth. Although organizational structures differ internationally, the principle of structured collaboration across medical, educational, and social services is broadly applicable. For adolescents experiencing both family-related stress and limited help-seeking availability, establishing shared monitoring and communication pathways across sectors may help create compensatory safety nets while preserving the adolescent's sense of agency and safety.

Several limitations should be considered. First, stressors and help-seeking resources were assessed using brief self-report items, which did not capture qualitative aspects of relationships, such as relationship quality, specific family members involved, or the intensity and consistency of support. More detailed and multidimensional assessments may clarify whether distinct components of family support differentially relate to suicide-related outcomes.

Second, the cross-sectional design precludes conclusions regarding temporal or causal relationships. It remains possible that suicide-related distress influences perceived help-seeking availability rather than the reverse. Longitudinal studies are needed to clarify directionality and potential bidirectional effects.

Third, although multiple imputation was conducted under a missing-at-random assumption, residual bias due to unmeasured confounding or non-random missingness cannot be entirely excluded. Accordingly, findings should be interpreted as associative rather than causal.

An additional limitation concerns the diagnostic framework of adjustment disorder (AD) in the present study. Diagnoses were assigned in routine clinical practice prior to the full implementation of ICD-11 criteria and were based on clinicians' judgment without the use of structured instruments such as the Adjustment Disorder–New Module (ADNM) or the International Adjustment Disorder Questionnaire (IADQ)^[18]. At the time of data collection, diagnostic practices were largely informed by ICD-10 or DSM-5 frameworks, which have been criticized for limited specificity, substantial clinical discretion, and diagnostic overlap with depressive and anxiety disorders^[19]. In contrast, ICD-11 introduced more explicitly defined core features centered on stressor-related preoccupation and failure to adapt^[20]. Consequently, heterogeneity in diagnostic thresholds across clinicians cannot be excluded. The findings should therefore be interpreted as reflecting real-world clinical AD diagnoses in Japanese outpatient settings rather than strictly ICD-11–defined adjustment disorder.

In conclusion, suicide-related events among adolescents with adjustment disorder were associated not only with family-related stress but, more consistently, with the perceived unavailability of family as a help-seeking resource. These findings suggest that suicide risk assessment in this population should evaluate both stress exposure and adolescents' perceived access to emotionally supportive family relationships. Interventions that strengthen help-seeking pathways within families, alongside coordinated community-based supports when needed, may represent promising targets for early suicide prevention in adolescents with adjustment disorder. These findings highlight the importance of assessing relational accessibility within families when evaluating suicide risk among adolescents diagnosed with adjustment disorder.

Statements and Declarations

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Potential Competing Interests

No potential competing interests to declare.

Author contributions

Hidehito Miyazaki, Junichi Fujita conceived and designed the study. Hidehito Miyazaki, Junichi Fujita, Yoshiko Aoki, Kumi Aoyama collected data on patients. Hidehito Miyazaki, Junichi Fujita, Yoshiko Aoki, Kumi Aoyama diagnosed patients with psychiatric disorder. Hidehito Miyazaki, Junichi Fujita, Yoshiko Aoki, Kumi Aoyama are responsible for the data acquisition. Hidehito Miyazaki, Junichi Fujita, Satoru Shinoda analyzed the data. Hidehito Miyazaki, Junichi Fujita drafted the initial manuscript. Junichi Fujita assisted with the literature review. Akitoyo Hishimoto, Tomoyuki Miyazaki, Takeshi Asami reviewed and revised the manuscript. All authors read and approved of the final manuscript.

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