



Perceived Social Support and Adolescent Self-Harm: The Dominant Protective Role of Family Support

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Abstract

Adolescence is a developmental period associated with increased vulnerability to maladaptive coping strategies, including self-harming behavior. Given the importance of interpersonal relationships during this stage, the present study examined the association between perceived social support and self-harming behavior, with a focus on the predictive role of different sources of support and the moderating effect of gender. The sample consisted of 155 adolescents aged 12–18 years. Perceived social support was measured using the Multidimensional Scale of Perceived Social Support, and self-harming behavior was assessed using a modified version of the Self-Harm Inventory. The results showed a significant negative association between perceived social support and self-harming behavior, indicating that higher levels of perceived support are linked to lower levels of self-harm ($r = -0.38$, $p < 0.001$). Among specific sources of support, family support demonstrated the strongest relationship ($r = -0.45$, $p < 0.001$). Regression analysis confirmed that perceived social support significantly predicted self-harming behavior, explaining approximately 18,3% of its variance, with family support emerging as the only significant predictor when all sources were considered simultaneously. The moderating effect of gender was not statistically significant. These findings highlight the important protective role of perceived social support – particularly within the family context – in reducing self-harming behavior in adolescence and underscore its relevance for understanding maladaptive coping during this developmental period. They further suggest that psychological interventions should prioritize strengthening supportive family relationships and enhancing adolescents' perception and effective use of available social support.

Keywords: perceived social support, self-harm, adolescence, protective factors, gender

1. Introduction

Adolescence is a highly demanding developmental period characterized by numerous changes across all domains of individual development. In addition to fundamental somatic transformations (including physical maturation, hormonal activity, and the attainment of sexual maturity; Jaworska & MacQueen, 2015), a major challenge lies in adapting to psychological changes (such as the consolidation of personal and gender identity, and the formation of one's own opinions, values, and attitudes) (Steensma et al., 2013; Branje et al., 2021; Balmer et al.,

1997), as well as in fulfilling the multiple developmental tasks specific to this stage (Manning, 2002). During this period, the adolescent begins to establish a unique position within the community and society—relationships with parents evolve, social networks are formed, first intimate relationships are experienced, and responsibility for one's actions is gradually assumed (Ruiz & Yabut, 2024; Gorla et al., 2024; Wray-Lake et al., 2016).

The successful navigation of these developmental tasks is complicated by several specific factors. These include biological aspects (e.g., an imbalance between emotion-processing systems, such as the limbic system, and regulatory systems, such as the prefrontal cortex, resulting in increased risk-taking and emotional reactivity; Konrad et al., 2013), environmental influences (e.g., peer pressure, school demands, and social changes; Blakemore & Mills, 2014; Albert et al., 2013), and psychological characteristics (e.g., heightened stress reactivity; Romeo, 2013). The demands, challenges, and pressures associated with adolescence may become overwhelming for more vulnerable individuals, potentially resulting in a range of psychopathological outcomes.

In the context of the demands inherent to the transitional period of adolescence and its developmental specificities, self-injurious behavior has increasingly attracted attention in recent decades. Self-injury is defined as the conscious and intentional infliction of harm upon oneself with the aim of damaging one's physical and/or psychological health, often accompanied by pain. It typically involves repetitive behavior and differs from other maladaptive behaviors (e.g., substance abuse, eating disorders) in that its primary motive is self-harm rather than other objectives (e.g., the euphoric effects of substances or weight regulation) (Demuthova, 2023). Self-injurious behavior is considered a highly risky and potentially addictive form of maladaptive coping with psychological distress (Ruan & Yan, 2025), serving multiple psychological functions (Klonsky, 2009). In adolescence, particularly relevant functions include the alleviation of intense negative emotions (affect-regulatory function), the postponement or management of suicidal impulses (anti-suicide function), the communication of distress and the seeking of support (communication function), and the expression of feelings such as worthlessness, anger, self-hatred, and frustration (self-punishment function) (Klonsky, 2007, 2009).

Self-injurious behavior is a multi-etiological phenomenon (Yan & Yue, 2023), requiring consideration of a broad spectrum of causal, triggering, contributing, and maintaining factors for its proper understanding and effective intervention. Among the variables most frequently associated with the emergence and maintenance of self-injury in adolescence are social contextual factors. These include parental psychopathology (Gromatsky et al., 2017), social isolation from peers (Du et al., 2021), negative peer influence (Victor & Klonsky, 2018), poor quality of attachment to parents, reduced warmth and empathy in sibling interactions (Brown & Witt, 2019), or social stigma (Meheli & Banerjee, 2022). At the same time, social relationships represent a crucial source of support for adolescents and may exert protective and corrective effects across a wide range of psychological difficulties, including self-injury. Seeking social support is therefore considered a key adaptive coping strategy.

Social support can play a critical role in self-injurious behavior through both direct and indirect mechanisms. Research has demonstrated that social support from family and significant others is associated with decreased perceived stress, anxiety, and depression, as well as increased positive affect (Acoba, 2024). Notably, stress (Miller et al., 2019), anxiety and depression (Jiao et al., 2022), and negative affect (Guo et al., 2025) are well-established predictors of self-injurious behavior. Furthermore, a meta-analysis of 64 studies confirmed a strong association between social support and overall mental health (Harandi et al., 2017), which may suggest a protective effect of social support on self-harming behavior as well. Direct associations

between social support and self-injury have been observed in both non-clinical samples (Lin et al., 2025; Zhou et al., 2025) and among hospitalized patients engaging in self-injury (Kellerman et al., 2022). These findings have also yielded additional important insights. For example, teacher support has been shown to have a stronger association with adolescent self-harming behaviors compared to support from family and friends (Zhou et al., 2025). Conversely, in clinical samples of hospitalized adolescents, no association was found between self-harming behavior and support from other patients or friends outside the unit (Kellerman et al., 2022). Additionally, Tang et al. (2018) emphasize that gender plays a significant role alongside social support in influencing self-injury. Gender has been identified as an important factor affecting the overall prevalence of self-injurious behavior (Moloney et al., 2024), as well as its functions (Lutz et al., 2024), forms (Andover et al., 2010), and motivations (Demuthova & Demuth, 2019). These findings suggest that the relationship between social support and self-injury is likely influenced by additional variables and highlight the importance of examining specific sources of social support.

When investigating the relationship between social support and self-injury, it is also important to conceptualize social support as a subjective construct – i.e., perceived social support. Individuals engaging in self-injury are often characterized by low self-esteem (Forrester et al., 2017), loneliness (Huang et al., 2023), and various cognitive biases (e.g., beliefs of being unloved or a burden to others; Chu et al., 2016; Han et al., 2024). These factors may limit the utilization of available social support and contribute to its perception as inaccessible. Therefore, examining perceived rather than objectively available social support appears more appropriate in adolescent populations.

Given the complexity of self-injurious behavior, the variability in findings regarding the effects of social support and its specific sources, and the lack of research addressing the moderating role of gender in the relationship between perceived social support and self-injury, the following research questions were formulated to address these gaps:

RQ1: Is perceived social support associated with the occurrence of self-injurious behavior in adolescence?

RQ2: Does the level of perceived social support predict self-injurious behavior in adolescence?

RQ2a: Does perceived social support from significant others predict self-injurious behavior in adolescence?

RQ2b: Does perceived social support from family predict self-injurious behavior in adolescence?

RQ2c: Does perceived social support from friends predict self-injurious behavior in adolescence?

RQ3: Does gender moderate the relationship between perceived social support and self-injurious behavior in adolescence?

2. Materials and Methods

2.1 Participants

Data were collected from participants across Slovakia, including students attending primary schools (aged 12–14 years) and various types of secondary schools, encompassing both vocational secondary schools and grammar schools (aged 15–18 years). In the first phase of the study, primary and secondary schools were contacted and invited to participate. Schools that agreed to disseminate information about the study to eligible students and their parents facilitated the recruitment process, resulting in more than 300 individuals being invited to participate. The inclusion criteria for participation in the study were adolescence (aged 12–18

years; Jaworska & MacQueen, 2015), the provision of informed consent by both parents/legal guardians and participants, and willingness to participate. A total of 178 participants enrolled in the study; however, 23 participants (12.9%) did not provide complete data and were therefore excluded from the dataset. After excluding responses with missing data, the final sample consisted of 155 participants: 85 males (55.5%), 65 females (41.9%), and 4 non-binary individuals (2.6%), with a mean age of 16.35 years ($SD = 1.73$). Due to the small number of non-binary participants, this group was excluded from the statistical analyses. Participants were recruited using a convenience sampling strategy.

2.2 Materials

Data were collected using a structured questionnaire consisting of three parts: (1) demographic data (age and gender), (2) the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988) to measure perceived social support, and (3) a modified version of the Self-Harm Inventory (SHI; Sansone & Sansone, 2010) to assess self-harming behavior.

The MSPSS measures overall perceived social support (a scale variable ranging from 12 to 84) as well as its specific sources: family, friends, and a significant other (each subscale contains 4 items rated on a Likert scale from 1 to 7). The MSPSS is used in both adult and adolescent populations and demonstrates good psychometric properties (e.g., Cherewick et al., 2025; Efthymiou et al., 2025). The internal consistency of the instrument in the present sample was satisfactory (Cronbach's $\alpha = .954$).

The SHI is a one-dimensional self-report questionnaire assessing the occurrence of 23 different forms of self-harming behavior. Compared to the original version (Sansone & Sansone, 2010), one item ("Lost a job on purpose") was removed due to the age of the sample. Based on previous research conducted with adolescent populations (see Demuthova & Demuth, 2019), two frequently occurring forms of self-harm were added ("Not slept enough to hurt yourself" and "Over-exercised to hurt yourself"). The original SHI demonstrated adequate fit to the Rasch model, requiring no modifications after evaluation of local response dependency, differential item functioning, and unidimensionality. The scale is able to identify gender and age differences. Significant associations between SHI and DASS-21 scores provide support for the SHI's convergent validity (Latimer et al., 2009). In our research, the presence of each form of self-harm was rated on a scale from 0 to 3 according to frequency (0 = never, 3 = often) enabling the questionnaire to measure self-harming behaviour on a scale with the gross score from 0 to 69. Cronbach's α for the modified SHI in the present sample was .967. Although the modified instrument differs slightly from the original SHI, only developmentally inappropriate content was removed and two adolescent-relevant behaviors previously identified in adolescent samples were added. Therefore, the conceptual construct measured remained consistent with the original instrument, although direct comparison with studies using the original SHI should be interpreted cautiously.

2.3 Design and Procedure

An exploratory cross-sectional study design was used to address the research questions. Given the limitations related to the size and characteristics of the sample, the study should be considered as an exploratory probe. Data collection was conducted in secondary schools in Slovakia during class time with the consent of the schools. After obtaining informed consent also from parents, students were informed about the purpose, content, and conditions of the data collection. After providing consent, participants were given a QR code linking to a questionnaire on the Google Forms platform to ensure anonymity. A trained professional was present throughout the data collection to answer any questions. Participants could withdraw from the study at any time, interrupt participation, or leave the questionnaire incomplete without informing the administrator and without any consequences. After data collection, the

incomplete responses were removed, and the dataset was transferred to statistical software for further analysis.

2.4 Data Analysis

Data were analyzed using the licensed IBM Statistical Product and Service Solutions (SPSS), version 32.0.0.0. The normality of the data distribution was assessed using the Shapiro–Wilk test together with analyses of skewness and kurtosis. None of the variables (self-harming behavior, perceived social support and its subscales, and age) showed a normal distribution; therefore, non-parametric statistical tests were used. Spearman correlation analysis was applied to examine the relationship between perceived social support and self-harming behavior. Linear regression analysis with bootstrapping was used to assess the predictive effect of perceived social support and its subscales on self-harming behavior.

The moderating effect of gender was examined using PROCESS macro version 5.0 (Model 1; Hayes, 2022). Because residual diagnostics indicated violations of homoscedasticity, moderation models were estimated using HC3 heteroscedasticity-consistent standard errors together with 5,000 bias-corrected and accelerated bootstrap samples to obtain robust confidence intervals.

2.5 Ethical Considerations

The research project was approved within grant project No. APVV-23-0181 of the Slovak Research and Development Agency under the Ministry of Education, Research, Development and Youth of the Slovak Republic. It was also approved by the Ethics Committee of the Faculty of Arts at the University of Ss. Cyril and Methodius in Trnava (under the registration number UCM-FF-EK 6/2023). Data collection was anonymous and voluntary and was preceded by informed consent from participants and their legal guardians. Given the sensitive nature of self-harming behavior, data collection was conducted in the presence of a trained professional. After completing the questionnaire, participants were informed about the possibility of psychological consultation with the research provider, a school psychologist, or local psychological counseling centers. Participants were provided with contact information for these forms of psychological support, as well as for anonymous telephone, email, and chat helplines.

3. Results

Table 1 presents the descriptive statistics for the study variables. Regarding gender distribution, the sample comprised 85 male (55.6%), 65 female (41.9%), and 4 non-binary (2.6%) adolescents. Due to the small number of non-binary participants, this group was excluded from the subsequent statistical analyses.

Table 1. Descriptive statistics for measured variables

			Perceived social support			
	age	Self-harm	total	from significant others	from family	from friends
N	151	151	151	151	151	151
Mean	16.36	6.8079	63.3377	5.5248	5.2036	5.1060
Median	17.00	2.0000	69.0000	6.0000	5.5000	5.5000
Std. Dev.	1.730	12.4556	17.3896	1.57685	1.70890	1.60765

Source: authors

3.1 Research Question 1

To examine the relationship between self-harming behavior (SHI) and perceived social support, Spearman correlation analysis was used. A statistically significant negative correlation was found between self-harming behavior and overall perceived social support (MSPSS), $r = -0.375$, $p < 0.001$. The confidence interval (95% CI [-0.508; -0.225]) indicates a weak to

moderate strength of the relationship (Table 2). Higher levels of perceived social support were associated with lower levels of self-harming behavior.

Table 2. Spearman correlations between self-harming behavior and perceived social support (total and its dimensions)

Variable	ρ	95 % CI	p	N
MSPSS (total)	-0.375	[-0.508; -0.225]	< 0.001	151
Significant others	-0.218	[-0.369; -0.056]	0.007	151
Family	-0.453	[-0.575; -0.312]	< 0.001	151
Friends	-0.215	[-0.367; -0.053]	0.008	151

Note: MSPSS = Multidimensional Scale of Perceived Social Support.

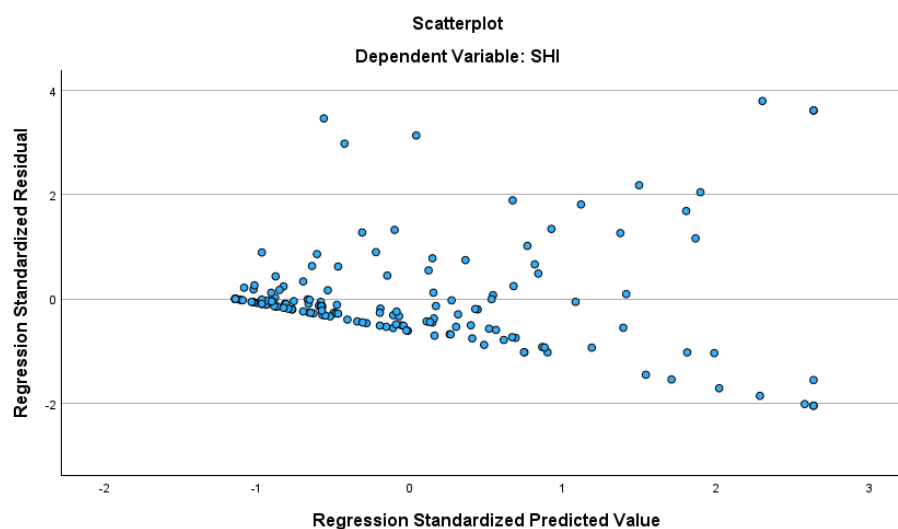
Source: authors

Analysis of the individual MSPSS subscales showed that all sources of social support were significantly negatively correlated with self-harming behavior. The strongest association was found for family support ($\rho = -0.453$, $p < 0.001$, 95% CI [-0.575; -0.312]). Weaker, but still statistically significant, correlations were observed for support from significant others ($\rho = -0.218$, $p = 0.007$, 95% CI [-0.369; -0.056]) and support from friends ($\rho = -0.215$, $p = 0.008$, 95% CI [-0.367; -0.053]).

These results indicate that higher perceived social support is associated with lower levels of self-harming behavior, with the strongest relationship observed for family support.

3.2 Research Question 2

To examine the relationship between self-harming behavior (SHI) and perceived social support, linear regression analysis was conducted. When controlling for the homoscedasticity, the scatter plot of standardized residuals against standardized predicted values (Graph 1) indicates that the residuals are centered around zero; however, their variability increases as the predicted values become larger, forming a slightly funnel-shaped pattern.



Graph 1. Scatterplot of the homoscedasticity for self-harming behavior

Note: SHI = Self-Harm Inventory

Source: Authors

Because the assumptions of normality and homoscedasticity were not fully met, the regression coefficients were additionally evaluated using 5,000 bias-corrected and accelerated (BCa) bootstrap samples. The bootstrap analyses were performed to obtain robust confidence intervals and to verify whether the conclusions of the regression analyses remained unchanged.

First, the effect of overall perceived social support (MSPSS) on self-harming behavior was analyzed. The model was statistically significant, $F(1,149) = 33.39$, $p < 0.001$, explaining 18.3% of the variance in self-harming behavior ($R^2 = .183$). Perceived social support was a significant negative predictor of self-harming behavior ($B = -0.306$, $\beta = -0.428$, $p < 0.001$). The bootstrapped BCa 95% confidence interval for the regression coefficient ranged from -0.509 to -0.128, excluding zero and therefore confirming the statistical significance and robustness of the observed effect (Table 3). These findings indicate that higher levels of perceived social support are associated with lower levels of self-harming behavior, and that this conclusion remained unchanged after bootstrap estimation.

Table 3. Simple linear regression predicting self-harming behavior from perceived social support (bootstrap estimates, 5,000 BCa samples)

Predictor	B	SE	β	t	p	Bootstrapped BCa 95% CI
Constant	26.22	3.48	—	7.53	< 0.001	[14.14, 39.92]
MSPSS	-0.306	0.053	-0.428	-5.78	< 0.001	[-0.509, -0.128]

Note: $N = 151$. Model summary: $R = 0.428$, $R^2 = 0.183$, Adjusted $R^2 = 0.178$, $F(1,149) = 33.39$, $p < 0.001$. Regression coefficients were evaluated using 5,000 bias-corrected and accelerated (BCa) bootstrap samples.

Source: authors

Subsequently, a multiple linear regression analysis was conducted with the three MSPSS subscales (significant others, family, and friends) as predictors. The overall model was statistically significant, $F(3,147) = 13.13$, $p < 0.001$, explaining 21.1% of the variance in self-harming behavior ($R^2 = 0.211$; Adjusted $R^2 = 0.195$). Again, regression coefficients were evaluated using BCa bootstrap confidence intervals (Table 4).

Table 4. Multiple linear regression predicting self-harming behavior from perceived social support subscales (bootstrap estimates, 5,000 BCa samples)

Predictor	B	SE	β	t	p	Bootstrapped BCa 95% CI	Collinearity Statistics	
							Tolerance	VIF
Constant	25.42	3.47	—	7.33	< 0.001	[12.70, 39.72]		
Sig. others	0.319	0.983	0.040	0.324	0.746	[-1.824, 2.296]	0.346	2.889
Family	-2.881	0.762	-0.395	-3.779	< 0.001	[-4.538, -1.342]	0.490	2.040
Friends	-1.055	0.865	-0.136	-1.219	0.225	[-2.907, 0.758]	0.430	2.325

Note. $N = 151$. Model summary: $R = 0.460$, $R^2 = 0.211$, Adjusted $R^2 = 0.195$, $F(3,147) = 13.13$, $p < 0.001$. Confidence intervals are based on 5,000 BCa bootstrap samples.

Source: authors

Among the predictors, only family support significantly predicted self-harming behavior ($B = -2.881$, $\beta = -0.395$, $p < 0.001$). Its bootstrapped BCa 95% confidence interval ranged from -4.538 to -1.342, excluding zero and confirming the robustness of the association. In contrast, the BCa confidence intervals for support from significant others (95% BCa CI [-1.824, 2.296]) and friends (95% BCa CI [-2.907, 0.758]) included zero, confirming that neither predictor was statistically significant.

Overall, the bootstrap analyses produced the same pattern of results as the original regression analyses. Family support remained the only significant predictor of self-harming behavior, whereas support from significant others and friends did not contribute significantly to the model. Tolerance values ranged from 0.346 to 0.490 and variance inflation factors (VIFs) ranged from 2.040 to 2.889 indicating no evidence of problematic multicollinearity among the predictors. Thus, the estimated regression coefficients were not substantially inflated by intercorrelations among the independent variables. Together with the bootstrap analyses, these

findings support the robustness of the regression results despite the observed violations of regression assumptions.

3.3 Research Question 3

To account for the previously identified heteroscedasticity, the moderating role of gender (0 = male, 1 = female) in the relationship between overall perceived social support (MSPSS) and self-harming behavior (SHI) was examined using PROCESS macro version 5 (Model 1; Hayes, 2022) with HC3 heteroscedasticity-consistent standard errors (Table 5).

Table 5. Moderating effect of gender on the relationship between perceived social support (MSPSS) and self-harming behavior

Predictor	B	HC3 SE	t	p	95% CI
Constant	6.85	0.98	7.01	< 0.001	[4.92, 8.78]
MSPSS	-0.32	0.11	-3.04	< 0.01	[-0.53, -0.11]
Gender	2.43	2.04	1.19	0.237	[-1.61, 6.46]
MSPSS × Gender	-0.04	0.22	-0.18	0.861	[-0.47, 0.39]

Note: Model summary: $R^2 = 0.192$; $F(HC3) = 3.64$; $p = 0.014$. Interaction: $\Delta R^2 = 0.0005$; $F(HC3) = 0.031$; $p = 0.860$.

Source: authors

Perceived social support remained a significant negative predictor of self-harming behavior. The interaction between perceived social support and gender was not statistically significant, indicating that the association between perceived social support and self-harming behavior did not differ between male and female adolescents.

Because family support emerged as the only significant predictor among the MSPSS subscales, an additional moderation analysis was conducted using family support as the predictor (Table 6). Family support remained a significant negative predictor of self-harming behavior ($B = -3.27$, $HC3 SE = 0.94$, $t = -3.50$, $p < 0.001$, 95% CI [-5.12, -1.42]). Neither gender ($p = 0.552$) nor the interaction between family support and gender ($B = 0.24$, $HC3 SE = 1.80$, $t = 0.13$, $p = 0.894$) reached statistical significance, indicating that the protective effect of family support was comparable for male and female adolescents (Table 5). The interaction explained only an additional 0.03% of variance in self-harming behavior ($\Delta R^2 = 0.0003$), indicating negligible practical importance.

Table 6. Moderating effect of gender on the relationship between family support and self-harming behavior

Predictor	B	HC3 SE	t	p	95% CI
Constant	6.81	0.94	7.23	< 0.001	[4.94, 8.67]
Family Support	-3.27	0.94	-3.50	< 0.001	[-5.12, -1.42]
Gender	1.11	1.87	0.60	0.552	[-2.57, 4.80]
Family Support × Gender	0.24	1.80	0.13	0.894	[-3.32, 3.81]

Note: Model summary: $R^2 = 0.205$; $F(HC3) = 4.88$; $p = 0.003$. Interaction: $\Delta R^2 = 0.0003$; $F(HC3) = 0.018$; $p = 0.894$.

Source: authors

Overall, the results indicate that gender does not moderate the relationship between overall perceived social support and self-harming behavior, nor between the family support subscale and self-harming behavior.

4. Discussion

4.1 General Discussion

Adolescence represents a demanding developmental stage that places multiple demands on individuals. Cognitive maturation enables adolescents to access the adult world with its full range of consequences (including hypothetical reasoning, understanding the consequences of one's actions, identity formation, and the development of values); however, adolescents do not yet possess a sufficient range and quality of coping strategies to manage stressful situations effectively. Their decision-making is further influenced by developmental imbalance in the maturation of brain regions—prefrontal control regions (responsible for decision-making) mature later than affective response regions (such as the amygdala and ventral striatum). This imbalance leads to stronger activation of subcortical relative to cortical regions during adolescence, which may contribute to mood instability and increased emotional reactivity (Martin & Ochsner, 2016). In the presence of adverse experiences or heightened psychological stress, adolescents may therefore be more prone to adopting maladaptive coping strategies (such as self-harming behavior), particularly when such strategies provide temporary relief from negative emotions or intense tension.

Given that rational coping strategies are less accessible during adolescence, managing challenging situations may involve the use of coping strategies focused on seeking social support. The results of the present study indicate that perceived social support, as a whole, is significantly negatively correlated with self-harming behavior. This means that individuals who perceive higher levels of social support report lower levels of self-harming behavior. This finding is consistent not only with the theoretical framework presented but is also supported by findings from similar studies. For example, Pan et al. (2026) examined the relationship between social support and self-harming behavior in adolescents from outpatient clinics and also identified a significant negative correlation. Similarly, a large-scale study involving 3,500 Chinese adolescents confirmed a negative association between perceived social support and self-harming behavior (Yuan et al., 2024). The importance of social support was further confirmed in the analysis addressing Research Question 2, which demonstrated its significant protective effect on self-harming behavior. Comparable conclusions were reported by Xin et al. (2020), who, in a sample of 1,180 middle school students, identified a protective role of social support in relation to self-harming behavior. Overall, these findings suggest that perceived social support is associated with lower levels of self-harming behavior and may function as a protective factor during adolescence. However, given the cross-sectional design of the present study, these findings should be interpreted as reflecting statistical associations rather than causal effects.

Multiple linear regression analysis aimed to identify which specific sources of perceived social support (significant others, family, friends) exert a protective effect on self-harming behavior. Within this model, family support accounted for the largest proportion of variance in self-harming behavior, whereas support from friends and significant others did not contribute to its explanation beyond the family context. This finding may indicate that the family represents a more stable and long-term source of perceived support compared to significant others or peers within the present sample. This result can be interpreted in the context of developmental characteristics of adolescence—a period often marked by a shift in the importance of interpersonal relationships from family to peers; however, it remains evident that the family continues to represent the primary source of support for adolescents (Svetaz et al., 2014). Particularly in situations involving difficulties and problems that are intensified by limited coping capacities, adolescents may perceive that their peers are experiencing similar challenges and therefore view support from close adults as more effective. Similar findings were reported

by Kellerman et al. (2022), who found that support perceived from family members and inpatient unit staff was inversely associated with self-harm, whereas no relationship was found between self-harm and support from other patients or friends outside the unit. It has also been shown that family support exerts a protective effect even among individuals already engaging in self-harm, reducing the likelihood of suicidal behavior (Wolff et al., 2013). These findings indicate that, despite adolescents' increased orientation toward peers, they continue to prefer support from more experienced adults when facing difficulties.

An important extension of these findings is provided by Zhou et al. (2025), who demonstrated the significant role of teacher support in relation to self-harming behavior. Adults (even outside the family) may therefore represent important sources of perceived support for adolescents' mental health. The existence of strong relationships between specific sources of social support and self-harming behavior can also be explained by the concept of "social connectedness." In the study by Simundic et al. (2026), social connectedness fully explained the relationship between perceived social support from all sources and engagement in self-harm. Specifically, the relationship between perceived social support and self-harming behavior was fully accounted for by the extent to which individuals reported feeling connected to others. This highlights an important point: the mere presence of adults in an adolescent's environment does not automatically constitute a protective factor in the context of psychological difficulties. Rather, the observed association may depend on whether adolescents perceive these individuals as accessible and trustworthy sources of support.

The final part of the analysis focused on the potential moderating effect of gender on the predictive relationship between perceived social support and self-harming behavior. The moderation analysis did not confirm a significant effect of gender – perceived social support was similarly associated with self-harming behavior among male and female adolescents. This finding provides important implications for potential intervention strategies, which often require gender-specific considerations. However, in the context of facilitating social support as a preventive or intervention approach for self-harming behavior, it appears that interventions designed to strengthen perceived social support may be relevant.

The findings also have important implications for educational practice. Given that family support showed the strongest negative association with self-harming behavior in the present sample, schools should not be viewed solely as settings for the identification of at-risk adolescents, but also as important partners in strengthening family-based protective processes. School psychologists, counselors, and teachers may play a valuable role in facilitating communication between schools and families, providing parents with information about self-harming behavior and its warning signs, and supporting parental competencies related to emotional communication and help-seeking. Preventive programs may therefore benefit from involving parents directly and promoting collaborative school–family approaches. Such efforts may contribute to adolescents perceiving their family environment as a more accessible and supportive resource when coping with psychological distress.

4.2 Limitations and Suggestions for Future Research

Several limitations of the present study should be acknowledged when interpreting the findings, each of which also provides directions for future research.

First, the limitations related to the research sample must be considered. The study was conducted on a relatively small sample of adolescents, recruited by a convenience sampling method. As a result, the sample cannot be considered representative of the broader adolescent population, limiting the generalizability of the findings. Furthermore, all participants were recruited exclusively from Slovakia, which introduces potential cultural specificity. Sociocultural factors – such as family structures, norms regarding parent–child relationships,

and the prolonged co-residence of adolescents with their families – may influence how social support is perceived and utilized. Consequently, the predominance of family support observed in the present study may partly reflect characteristics of this cultural context and should not be assumed to generalize directly to societies with different family structures, parenting norms, or expectations regarding adolescent autonomy. Cross-cultural studies are needed to determine whether the relative importance of family, peer, and other sources of support varies across sociocultural settings.

An additional concern is the very small number of non-binary participants ($N = 4$), who were excluded from moderation analyses due to insufficient statistical power. This is particularly important given evidence suggesting that gender-diverse adolescents may experience distinct relational dynamics (e.g., in the context of identity development or disclosure) and may be at elevated risk for self-harming behavior. Although the sample was not probability-based, the observed main effects were of moderate magnitude, and the sample size was sufficient to detect such effects with high statistical power. At the same time, we acknowledge that the study may have been less sensitive to detecting very small interaction effects. However, the observed gender moderation effects were themselves very small suggesting limited practical significance even if larger samples were available. Future research should aim to employ larger, more diverse, and probabilistic samples, include participants from different cultural contexts, and ensure adequate representation of gender-diverse populations. Such approaches would allow for more robust and generalizable conclusions, as well as a more nuanced understanding of how sociocultural and gender-related factors shape the relationship between social support and self-harm.

Second, the cross-sectional design of the study represents a significant methodological limitation. Although the findings indicate that perceived social support is a significant predictor of self-harming behavior, the data do not allow for causal inferences. The observed relationships reflect associations at a single point in time and do not provide insight into the directionality or temporal dynamics of these variables. It remains unclear whether low perceived social support contributes to the development of self-harming behavior, or whether engagement in self-harm influences how individuals perceive or access social support. Future research should utilize longitudinal designs to examine developmental trajectories and causal pathways over time. Repeated-measures studies would help clarify the temporal ordering of variables, while intervention-based or experimental designs could further test causal mechanisms and the effectiveness of enhancing social support as a preventive strategy.

Third limitation of the present refers to the data. The analysis showed the violation of the homoscedasticity assumption, as the residual scatter plot suggested increasing variability of residuals across higher predicted values. This pattern indicates the presence of heteroscedasticity, which may affect the precision of the estimated standard errors and, consequently, the reliability of hypothesis testing and confidence intervals associated with the regression coefficients. Although the estimated regression coefficients remain unbiased, heteroscedasticity reduces the efficiency of the ordinary least squares estimators and increases the risk of drawing inaccurate conclusions regarding statistical significance.

Fourth, the study relied exclusively on self-report measures, which introduces several potential sources of bias. Although the instruments used demonstrated strong internal consistency, self-report data are susceptible to social desirability effects, recall bias, and subjective distortions. This issue is particularly salient in research on sensitive topics such as self-harming behavior, where underreporting or misrepresentation may occur. Additionally, the study focused solely on perceived social support, which, while theoretically justified, does not capture the full complexity of actual support availability or interpersonal dynamics. Future research should

incorporate multi-method assessment strategies, including clinician-administered interviews, informant reports (e.g., from parents, teachers, or peers), and behavioral or observational measures. Combining subjective and objective indicators of social support would provide a more comprehensive understanding of its role.

Another limitation concerns the modification of the Self-Harm Inventory (SHI) used in the study. Although the adaptation was intended to increase relevance for adolescent populations, it may reduce comparability with findings from studies using the original instrument. Moreover, despite satisfactory internal consistency, further validation of the modified scale is necessary to ensure its construct validity and reliability across different populations. Future research should focus on the systematic validation of adapted instruments and consider using both standardized and context-specific measures. Complementing quantitative tools with qualitative methods (e.g., interviews or open-ended responses) may also help capture nuanced forms and meanings of self-harming behavior in adolescence.

A final direction for future research concerns the examination of additional variables that may potentially influence the observed associations between social support and self-harm. Specifically, future studies should consider investigating psychological factors that may serve as potential explanations for the occurrence of both – low perceived social support from friends and significant others and self-harming behavior. For instance, depressive symptomatology and elevated levels of anxiety, both of which are highly prevalent among adolescents who engage in NSSI (Jiao et al., 2022), may contribute to greater social withdrawal and reduced access to, or perceived availability of, various forms of social support. At the same time, these psychological difficulties may independently increase the likelihood of engaging in self-harming behaviors. Consequently, incorporating such variables into future research designs may provide a more comprehensive understanding of the complex mechanisms linking social support with self-harm and help to clarify the psychological pathways through which social support may exert its protective effects.

5. Conclusion

The present study contributes to the literature on adolescent self-harming behavior by demonstrating that higher perceived social support was associated with lower levels of self-harm, with family support showing the strongest association among the examined sources of support. No evidence was found that gender moderated these associations. Although these findings highlight the potential importance of family relationships in understanding adolescent self-harming behavior within this Slovak sample, they should be interpreted cautiously in light of the study's cross-sectional design, convenience sampling, and reliance on self-report measures. Longitudinal and cross-cultural research is needed to clarify the direction of these associations and their generalizability. Nevertheless, the findings suggest that strengthening adolescents' perceptions of available social support, particularly within the family context, may represent a promising direction for future research and preventive interventions.

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