

Adolescent Self-Harm: Associations with Depressive Symptoms, Age, and Sex in Cross-Sectional Samples from 2019 and 2025

Zuzana Rojková and Claudia Misofová*

Department of Psychology, Faculty of Arts, University of Ss. Cyril and Methodius in Trnava, Slovakia

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ABSTRACT

Self-harm during adolescence represents a significant behavioral and public health concern associated with increased psychological vulnerability. The present study aimed to examine the relationship between depressive symptoms and self-harm in adolescents across two time points (2019 and 2025), with a particular focus on age and sex differences. Data were obtained from two national cross-sectional surveys conducted in Slovakia (N = 1,017 in 2019; N = 834 in 2025). Self-harm was assessed using selected physical forms from the Self-Harm Inventory, and depressive symptoms were measured using the Child Depression Inventory. The results indicated a significant positive association between depressive symptoms and self-harm in both cohorts; however, the strength of this relationship decreased in 2025. While depressive symptoms significantly increased over time, the variability of self-harm behaviors declined. Age and sex emerged as significant moderating factors, with age moderating the relationship in 2019 and sex in 2025. Girls showed a higher likelihood of self-harm, whereas the association between depression and self-harm was weaker among them. These findings suggest a potential shift from intrapsychic models of self-harm toward more complex frameworks that incorporate social and contextual influences. The results highlight the importance of considering broader environmental factors in understanding self-harm in contemporary adolescent populations.

1. Introduction

Self-harm during adolescence is a clinically significant behavioral phenomenon associated with various forms of psychological vulnerability. Meta-analytic findings from international research indicate a prevalence ranging from approximately 13% to 25% among adolescents, primarily in non-clinical samples (Swannell et al., 2014; Gillies et al., 2018; Pérez et al., 2021). However, prevalence estimates appear substantially higher in the Central European context, particularly in Slovakia and the Czech Republic, where studies have reported lifetime prevalence rates exceeding 40% (Démuthová, 2022; Dolejš et al., 2014; Kalivodová, 2021). At the same time, prevalence estimates within the Slovak context show considerable variability, ranging from approximately 7% to over 50%, depending largely on differences in methodology, sample characteristics, and the operationalization of self-harm. For example, studies using broader conceptualizations and standardized instruments such as the Self-Harm Inventory (SHI) tend to report markedly higher prevalence rates even in general adolescent populations. Démuthová and Doktorová (2019) identified lifetime self-harm experience in

* Corresponding author's E-mail address: misofova2@ucm.sk

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29.9% of respondents, while follow-up findings indicated that up to 56% of adolescents reported at least one current form of self-harm, with a substantial proportion engaging repeatedly (Démuthová & Démuth, 2020). These discrepancies underscore the importance of methodological considerations when interpreting prevalence data and highlight the need for a deeper understanding of the etiological mechanisms underlying self-harming behavior.

From an etiological perspective, self-harm is a complex behavior that cannot be explained by a single isolated factor. Current approaches emphasize its multilevel nature, in which the interaction of biological, psychological, and social determinants plays a role (Nock, 2009; Glenn & Klonsky, 2013). Among psychological factors, depressive symptoms, anxiety, and maladaptive coping strategies have been shown to be particularly key. Depressive symptoms have long been considered one of the most significant predictors of self-harm and represent a key form of emotional vulnerability associated with an increased risk of maladaptive behavioral manifestations (Cicchetti & Toth, 2009; Nock, 2009). Empirical studies also consistently point to their positive association with self-harm in the adolescent population (Hawton et al., 2012; Fox et al., 2018). They contribute to an individual's increased vulnerability primarily through persistent negative affect and weakened regulatory mechanisms, which can lead to an increased likelihood of self-harming behavior as a behavioral response to psychological distress (Klonsky, 2007; Chapman et al., 2006).

Research further indicates significant variability in the prevalence of self-harm across sociodemographic groups, with age and gender among the most relevant variables. These factors do not represent direct causes of the behavior, but rather contextual characteristics that can modify its occurrence, forms, and associated psychological mechanisms (Patton et al., 2016; Evans et al., 2005). In terms of age, self-harm appears most frequently in early and middle adolescence, though it may persist and change in nature during later developmental stages (Gillies et al., 2018; Muehlenkamp et al., 2012; Swannell et al., 2014). At the same time, its form and frequency also differ, with younger adolescents are more likely to exhibit experimental behaviors, while older adolescents more frequently display repetitive and more severe forms of behavior (Whitlock et al., 2013; Nixon et al., 2002). In terms of gender, research consistently points to a higher prevalence of self-harm among girls, which is often explained by a higher rate of internalized problems and differences in emotion regulation and coping strategies (Muehlenkamp et al., 2012; Bresin & Schoenleber, 2015; Nolen-Hoeksema & Girgus, 1994). Girls more frequently use internalizing strategies, such as rumination or self-blame, while boys tend toward externalizing behaviors or emotional suppression, which may also lead to different manifestations and lower rates of self-harm disclosure (Tamres et al., 2002).

Current research increasingly emphasizes temporal changes in the prevalence of self-harm, particularly in the context of the COVID-19 pandemic. Available research suggests that after 2019, there was an increase in mental health difficulties among adolescents, including depression, anxiety, and problems with emotion regulation, which are also identified as significant risk factors for self-harm (Racine et al., 2021). Social isolation, limited contact with peers, disruption of the school routine, and increased uncertainty represent significant stressors that may have contributed to adolescents' heightened vulnerability to risky behavior (Holmes et al., 2020; Guessoum et al., 2020). However, empirical findings are not entirely clear-cut — while some studies point to an increase in the incidence of self-harm following the pandemic, others highlight changes in its nature, frequency, or modes of manifestation (Santomauro et al., 2021; Ougrin et al., 2022). These differences may also be related to methodological variations across studies, as well as to different cultural and social contexts. Given these ambiguous findings, it is therefore important to compare data from the pre-pandemic and post-pandemic

periods, which may help clarify whether and how the prevalence and mechanisms of self-harm in the adolescent population are changing over time.

Based on these findings, the aim of this study is to identify associations between self-harm and depressive symptoms in adolescents and to examine age- and sex-specific differences across two time points (2019 and 2025), to uncover potential temporal changes in the prevalence and underlying mechanisms of self-harm.

- RQ1: What changes in self-harm and depressive symptoms were observed between the 2019 and 2025 adolescent cohorts?
- RQ2: Were there age- and sex-related differences in self-harm and depressive symptoms within each cohort?
- RQ3: How did the association between depressive symptoms and self-harm differ between the 2019 and 2025 cohorts and across age and sex subgroups?
- RQ4: Did age and sex moderate the relationship between depressive symptoms and self-harm in the 2019 and 2025 cohorts?

2. Materials and Methods

For this study, data obtained from two national surveys were used (APVV-17-0123: Self-harm: definition, prevalence, influencing factors and implications for clinical interventions; APVV-23-0181, Clinical and legal aspects of self-harm in adolescence), from 2019 and 2025. These were cross-sectional designs using standardized questionnaires.

2.1. Research Sample

The sample consisted of two cohorts corresponding to the years 2019 and 2025. The 2019 cohort included 1,017 respondents (65% girls, 35% boys), while the 2025 cohort included 834 respondents (55% girls, 45% boys). The sets were further divided into two age groups, 12-15 years and 16-18 years (Figure 1). These were primary and secondary school pupils from different regions of Slovakia. Data collection was conducted in classroom settings by trained administrators using a standardized procedure. Informed consent was obtained from parents in the case of minors and from adult participants themselves. Schools were approached and invited to participate in the project, and data collection was conducted in classes that agreed to take part in the study. Because participation depended on school willingness and organizational possibilities, the sample should be considered a convenience sample rather than a nationally representative one. Nevertheless, the large sample size provides a substantial basis for statistical analyses, although differences in cohort composition, particularly the higher proportion of older adolescents in the 2025 sample, should be considered when interpreting comparisons between cohorts.

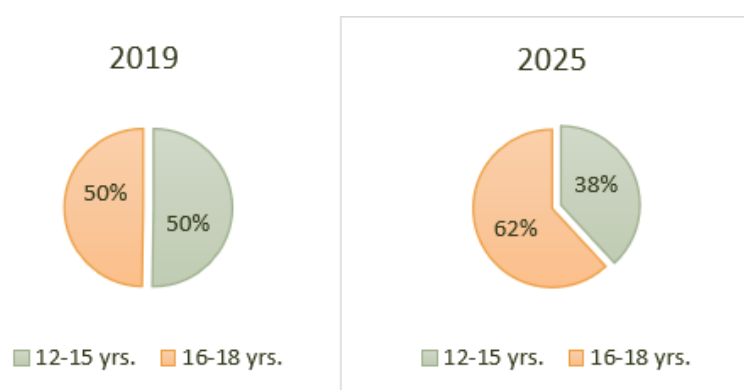


Figure 1. Age group distribution across two time points

2.2. Measurements

Self-harm Inventory (Sanson & Sanson, 2010) in the Slovak version (Démuthová's edit) measures direct and indirect forms of self-harm, while it is possible to capture the occurrence of individual forms. The current study included 6 physical forms (burning, hitting, banging the head, scratching, cutting and injuring). In the study, Self-harm was translated into 2 variables: as occurrence and as score:

- SH score (continuous), it is practically the sum of the experiences with 6 physical forms, The score tells about the variability of the experience (burning, scratching, cutting, banging the head, injuring, hitting).
- SH occurrence (1/0, occurrence vs. non-occurrence) – any lifetime experience, even a single. Lifetime occurrence was selected because the primary objective was to capture any experience with self-harm during adolescence rather than recent episodes only.

Child depression Inventory (Kovacs, 1992; M. Preiss, Ed. & Trans, 1998), which measures the rate of depressive symptoms in children and adolescents, which in high values indicate the risk of depressive disorder. The questionnaire recognizes 5 subscales and an overall score, which we call the depressivity variable (CDI total). The instrument has been standardized for the Slovak population and demonstrates satisfactory psychometric properties (e.g., Cronbach's alpha ranging from .71 to .89) and it is widely used in both research and clinical practice.

The study was conducted in accordance with ethical standards for research involving human participants and was approved by the Ethics Committee of the Faculty of Arts, University of Ss. Cyril and Methodius in Trnava (approval no. UCM-FF-EK 6/2023; November 15, 2023). Informed consent was obtained from parents of minors and from adult participants

2.3. Analyses

The data was evaluated using IBM SPSS 27.0 software. Methods of statistical description, comparative analyses for comparison of time sets, correlation analyses and binary regression analysis with interaction in two time sets separately were used. Analyses were conducted using complete-case (listwise deletion) procedures. Cases with missing values on variables included in a given analysis were excluded, and no imputation of missing data was performed.

3. Results

In Figure 2, we can see the data for the occurrence of SH in individual time sets and subgroups. We observe higher occurrence of SH in girls than boys in first set (2019), higher occurrence of SH in younger age group in the second set (2025) and no difference between time sets. Significant differences in self-harm occurrence are highlighted in Figure 2 and were tested using χ^2 analyses.

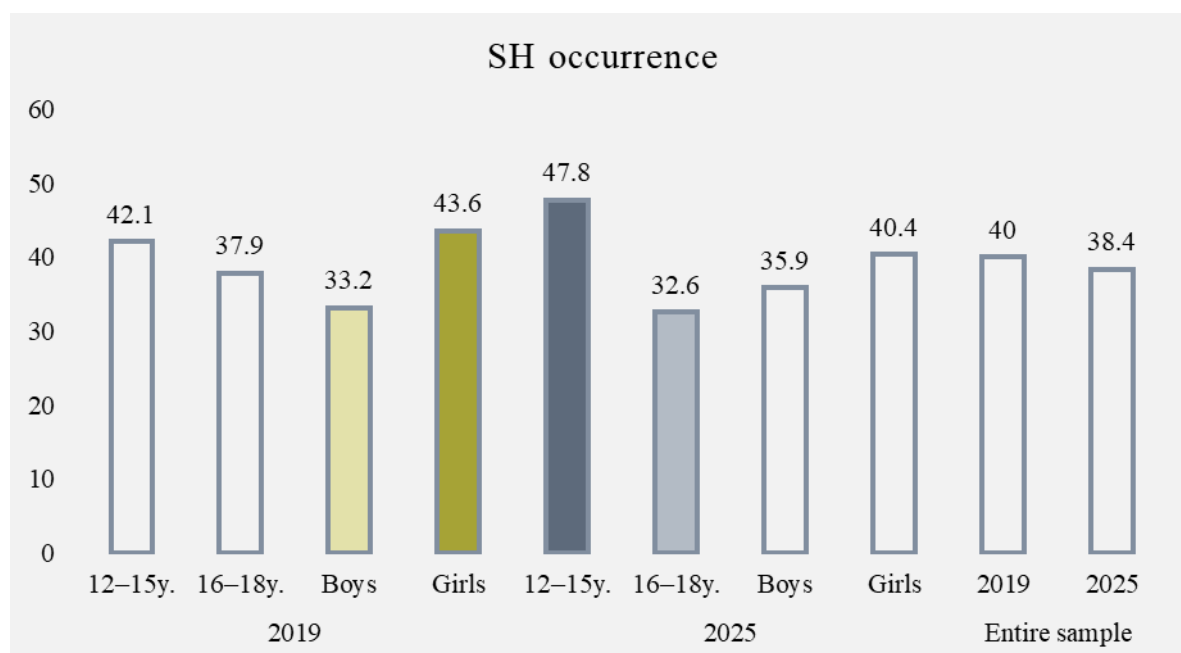


Figure 2. Percentage of occurrence of SH in time sets and subgroups by Age and Sex. Significant differences are highlighted in color

In Table 1, we present the results of the comparison of SH and CDI scores between groups by age, gender within time sets and between time sets. In 2019, girls reported significantly higher CDI and SH scores than boys, whereas no age differences were observed. In 2025, younger adolescents reported higher CDI and SH scores than older adolescents, while girls reported higher SH scores but not CDI scores. Comparisons between cohorts further showed significantly higher levels of depressive symptoms in 2025 and significantly higher SH scores in 2019.

Table 1. Results of comparison of CDI total and SH score between subgroups by age and sex and between time sets (t-test)

Year	Variable	Group	N	Mean	SD	p-value	95% CI for the Difference	Cohen's d
2019	CDI total	12-15 yrs	511	14.3	8.88	0.773	-0.11 – 0.14	0.002
		16-18 yrs	506	14.14	8.56			
	CDI total	Boys	352	12.53	8.16	< 0.001	0.17 – 0.43	0.30
		Girls	665	15.11	8.88			
	SH score	12-15 yrs	511	1.49	1.94	0.308	-0.06 – 0.19	0.07
		16-18 yrs	506	1.36	1.92			

Year	Variable	Group	N	Mean	SD	p-value	95% CI for the Difference	Cohen's d
	SH score	Boys	352	1.15	1.81	0.001	0.10 – 0.36	0.23
		Girls	665	1.59	1.98			
2025	CDI total	12–15 yrs	318	20.68	7.05	0.040	0.01 – 0.29	0.15
		16–18 yrs	516	19.65	6.99			
	CDI total	Boys	376	20.14	7.13	0.706	-0.11 – 0.16	0.03
		Girls	458	19.96	6.95			
	SH score	12–15 yrs	318	1.24	1.62	< 0.001	0.12 – 0.40	0.26
		16–18 yrs	516	0.84	1.48			
	SH score	Boys	376	0.81	1.30	0.001	-0.35 – 0.08	0.21
		Girls	458	1.14	1.71			
Entire sample	CDI total	2019	1017	14.22	8.72			
		2025	834	20.04	7.03	< 0.001	-0.82 – 0.63	0.73
	SH score	2019	1017	1.42	1.93			
		2025	834	0.99	1.55	< 0.001	0.15 – 0.33	0.24

Table 2 shows results of correlation testing. In both years, there is a significant linear positive correlation between depression and the variability of experience with various forms of physical self-harm. The association between depressive symptoms and self-harm was stronger in the 2019 cohort than in the 2025 cohort.

Table 2. Correlations (Pearson's r) between SH score and CDI total in entire sample and subgroups by age and sex in two time sets

	Group	Year	
		2019	2025
SH score*CDI total	12–15y.	0.630**	0.416**
	16–18y.	0.503**	0.245**
	Boys	0.543**	0.233**
	Girls	0.571**	0.387**
	Entire sample	0.568**	0.320**
**Note. $p < .001$.			

In Table 3 results of Binary regression analysis is shown. Depressive symptoms emerged as a significant predictor of self-harm occurrence in both 2019 and 2025. In the 2019, age was a significant predictor and moderator of the effect of depressivity; in the older group, there is a lower chance of self-harm; however, in the older group, the effect of depression on SH is stronger. In the 2025, gender was a significant predictor and moderator of the effect of depressivity; girls are 3.6 times more likely to self-harm, but the effect of depression on SH is weaker in girls.

Table 3. Results of Binary regression analyses within two time sets: Dependent: SH occurrence

Year	Predictor	B	SE	Wald	p-value	Exp(B)	95% CI for EXP(B)
2019	CDI total	0.123	0.015	66.320	0.000	1.131	1.098 – 1.165
	Age group (12–15)	-0.800	0.367	4.761	0.029	0.449	0.219 – 0.922
	Sex (Boys)	-0.112	0.378	0.088	0.767	0.894	0.426 – 1.877
	CDI × age	0.071	0.023	9.779	0.002	1.074	1.027 – 1.123
	CDI × sex	-0.003	0.024	0.017	0.897	0.997	0.951 – 1.045
2025	CDI total	0.110	0.018	36.329	0.000	1.116	1.077 – 1.157
	Age group (12–15)	-0.089	0.505	0.031	0.861	0.915	0.340 – 2.463
	Sex (Boys)	1.278	0.490	6.784	0.009	3.588	1.372 – 9.383
	CDI × age	0.033	0.023	1.974	0.160	1.033	0.987 – 1.082
	CDI × sex	-0.072	0.023	9.992	0.002	0.931	0.890 – 0.973
Model 2019: Cox & Snell R ² = .264, Nagelkerke R ² = .357, Hosmer–Lemeshow $\chi^2(8) = 9.64$, p = .291, overall classification accuracy = 74.1%. Model 2025: Cox & Snell R ² = .113, Nagelkerke R ² = .154, Hosmer–Lemeshow $\chi^2(8) = 13.45$, p = .097, overall classification accuracy = 66.3%.							

4. Discussion

The aim of this study was to examine the relationship between depressive symptoms and self-harm among adolescents in two time cohorts (2019 and 2025), with age and gender considered as moderators. The findings contribute to the current discourse, which views self-harm as a complex, multifactorial behavioral phenomenon during adolescence, determined by the interaction of individual, developmental, and social factors (Cipriano et al., 2017; Gillies et al., 2018; McEvoy et al., 2023).

Consistent with previous research, a statistically significant positive relationship between depression and self-harm was confirmed in both observed periods. This result corresponds with meta-analytic findings that identify depressive symptoms as one of the most significant risk factors for self-harm (Fox et al., 2018; McEvoy et al., 2023), as well as with theoretical models emphasizing the role of negative affectivity and emotional distress in the development of self-harming behavior (Klonsky, 2007; Chapman et al., 2006). From the perspective of developmental psychopathology, depression can be understood as a vulnerability factor that modifies an individual's response to stress and increases the likelihood of risky behavior (Hankin, 2015; McLaughlin et al., 2020).

The observed weakening of the association between depressive symptoms and self-harm in the 2025 cohort may suggest that factors beyond intrapsychic distress play a more prominent role in self-harming behavior than previously assumed. While classical models conceptualize self-harm primarily as a means of regulating intrapsychic distress (Nock, 2009; Klonsky, 2007), newer approaches increasingly emphasize the importance of social and contextual factors, including peer influences and the online environment (Odgers & Jensen, 2020; Keles et al., 2020; Naslund et al., 2020). The weakening of the relationship between depression and self-harm may thus indicate that self-harm is currently may be more strongly influenced by external and socially mediated factors than solely by internal emotional processes.

This interpretation is also supported by the finding of increased levels of depressive symptoms in 2025, which is consistent with research pointing to an increase in internalizing difficulties among adolescents in the post-pandemic period (Racine et al., 2021). Although depressive

symptoms increased, their relationship to self-harm weakened, suggesting that increased emotional distress may not linearly translate into higher rates of self-harm. This discrepancy is consistent with the hypothesis of a more complex etiology of self-harm that goes beyond individual emotional factors and also includes broader contextual and social determinants.

Age also played a significant role. In the 2019 cohort, younger adolescents showed a stronger association between depression and self-harm, which is consistent with developmental models pointing to lower levels of regulatory capacities and higher vulnerability in early adolescence (Blakemore & Mills, 2014). When interpreting these age differences, it is important to consider that they may not solely reflect age-specific developmental factors. They may also be influenced by the duration of self-harming behavior. Several studies suggest that the higher frequency or severity of self-harm in later adolescence may be a result of the cumulative effect of longer-term engagement in this behavior, rather than a direct consequence of older age (Jacobson & Gould, 2007; Nock, 2010; Swannell et al., 2014). In this context, it is possible that the stronger relationship between depression and self-harm in younger adolescents reflects the initial stages of the development of risky behavior, whereas in later adolescence, stabilized behavioral patterns come to the fore that are less directly linked to current emotional experiences.

However, this effect was not observed in the 2025 cohort, which may be related to several concurrently operating mechanisms. In addition to the possible homogenization of developmental differences due to shared environmental influences, particularly the digitalized environment (Odgers & Jensen, 2020), it is also important to consider the developmental trajectory of self-harming behavior over time (De Luca et al., 2023). Research indicates that self-harm has a developmental and cumulative nature, and repeated engagement in this behavior may contribute to its stabilization (Plener et al., 2015). As a result, differences between age groups may diminish, which subsequently manifests as an insignificant moderating effect of age.

Gender emerged as another significant factor, with higher rates of self-harm observed among girls, consistent with previous findings (Bresin & Schoenleber, 2015; Gillies et al., 2018). At the same time, however, the relationship between depression and self-harm was found to be weaker among girls, which may suggest gender differences in the functional role of self-harm. In line with functional models (Nock & Prinstein, 2004; Klonsky, 2007), it can be assumed that in girls, self-harm may more frequently serve interpersonal functions and potentially be linked to processes related to identity development, while its connection to intrapsychic distress may be less direct.

Another important finding is the reduction in the variability of self-harm over time. Given that the same measurement tool (SHI) was used in both cohorts, it can be assumed that this difference does not reflect changes in operationalization, but rather a real change in the distribution or diversity of forms of self-harm in the study population. This result may indicate a relative homogenization of self-harm manifestations, or a change in the forms of behavior adolescents report, which may also be related to a change in the functional significance or social context of this behavior in the current adolescent population. At the same time, however, it cannot be ruled out that some current manifestations of self-harm may take on different forms or contexts that are not fully captured by traditional measurement tools (Odgers & Jensen, 2020).

The limitations of this study primarily relate to the definition and measurement of self-harm. The SHI questionnaire used in this research captures only the occurrence of specific physical forms of self-harm and does not assess their intensity. Consequently, the resulting score should

not be interpreted as a direct measure of the level of self-harming behavior, but rather as an indicator of respondents' experience and the range of different physical forms they report.

Another limitation is the disproportionality of age groups across the examined time points, with a higher representation of older adolescents in the 2025 sample, which may affect the comparability of the findings. Additionally, the absence of quota sampling in the stratification of the dataset by settlement or type of school may reduce the representativeness of the sample. Finally, the monitoring of developmental trends in self-harm would benefit from a longitudinal research design, which would allow for a more accurate capture of changes over time.

The results of the study point to the need for a deeper investigation of changes in the determinants of experimentation with self-harm, especially with regard to changes in the social and emotional functioning of adolescents. The influence of the online environment, but especially the change in the quality of relationships in the online space, or social interaction in the online space, on risky behavior requires further research focusing on the modification of self-image, perception of criticism, assessment of the rationality and reality of various contents on social networks or from other sources. Here we see space within the framework of media, ethical, aesthetic education in primary and secondary schools, the implementation of intervention programs for the support of self-characteristics, self-confidence, critical thinking, self-control in the sense of limiting one's own activities in the online space and finding sources of self-realization in the real environment and in a real social group.

The present findings may have several practical implications. Given the observed association between depressive symptoms and self-harm in both cohorts, preventive efforts may benefit from including the early identification of depressive symptomatology in adolescents. School psychologists, counselors, and other mental health professionals may consider interventions aimed at strengthening emotional regulation and adaptive coping skills. Furthermore, considering the growing relevance of digital environments in adolescent development, prevention programs may also address media literacy, responsible social media use, and the management of online stressors. Although the present findings do not allow causal conclusions, such approaches may represent potentially useful components of broader prevention strategies targeting adolescent mental health and self-harm. Particular attention may be warranted for younger adolescents, as previous research suggests that early intervention could help reduce the risk of self-harming behaviors becoming more persistent over time.

Taken together, the findings may be consistent with a shift from purely intrapsychic models of self-harm toward more complex transactional frameworks integrating both individual and environmental factors; however, this interpretation should be considered tentative, as social and contextual variables were not directly assessed in the present study.

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Appendix

Participant	Age Group	Region	Identity	Key Terms	Thematic Coding	Themes	ACIR	Summary of Responses
P1	Early-Career	North	LGBTQ+	emotionally, misrepresented, reframed	Emotional Baiting, Relational Deflection	Emotional Misrepresentation	None	Emotional misrepresentation, confusion and reduced confidence.
P2	18+ secondary education	South	Female	exclusion	Institutionalized Misogyny, Relational Deflection	STEM Gatekeeping	Intuitive	Felt gatekept in STEM club; navigated exclusion using intuitive reasoning.
P3	Early-Career	North	Female	misrepresented and reframed	Emotional Baiting, Relational Deflection	Emotional Misrepresentation	Intuitive, Reflective, Analytic	Felt emotionally misrepresented during a team project; reframed experience using reflective reasoning.
P4	Mid-Career	North	Male Ally	conflict, frustration, expectations	Emotional Baiting, Performative Interaction	Emotional Suppression	Reflective, Intuitive, Analytic	Managed team conflict by suppressing personal frustration; reflected on emotional expectations.
P5	Early-Career	North	Female	emotionally, misrepresented, reframed	Emotional Baiting, Relational Deflection	Emotional Misrepresentation	Reflective	Undervalued during leadership meeting; assessed experience using reflective reasoning.
P6	Mid-Career	South	Disabled	silence	Proximity, Displacement	Strategic Silence	Reflective, Creative, Analytic	Experienced strategic silence in meetings; used creative reasoning to assert presence.
P7	Mid-Career	South	Female	silence	Institutionalized Misogyny, Relational Deflection	Strategic Silence	Creative	Silence in meetings; controlling impulsive postures to assert strength; action: applied creative reasoning to assert presence.
P8	Mid-Career	South	Disabled	deflection, intimidation	Proximity, Displacement	Strategic Silence	Reflective, Creative, Analytic	Experienced strategic silence in meetings; used creative reasoning to assert presence.
P9	Early-Career	North	LGBTQ+	emotionally, misrepresented, reframed	Emotional Baiting, Relational Deflection	Emotional Misrepresentation	Intuitive, Reflective	Project male toxicity; avoiding repeated encounters which restrict presence in leadership forums.
P10	Mid-Career	South	Disabled	silence, assert	Proximity, Displacement	Strategic Silence	Reflective, Creative, Analytic	Experienced strategic silence in meetings; used creative reasoning to assert presence.
P11	Entry-Level	North	Ethnic Minority	undervalued, patterns	Gender Power Dynamics, Displacement	Economic Invisibility	None	Contributions to community work undervalued; excused behavior as valid cause due to seniority.
P12	Retiree	North	Ethnic Minority	undervalued, patterns	Gender Power Dynamics, Displacement	Institutional structure and male preference	Reflective	Contributions to field work minimized; exercised general reasoning to identify patterns.
P13	Early-Career	North	LGBTQ+	emotionally, misrepresented, reframed	Emotional Baiting, Relational Deflection	Emotional Misrepresentation	Intuitive, Reflective, Analytic	Misrepresented during a joint projects; reframed experience using reflective reasoning.
P14	Retiree	North	Female	undervalued, patterns	Gender Power Dynamics, Displacement	Economic Invisibility	Analytic, Reflective	Contributions to community work undervalued; used analytic reasoning to identify patterns.
P15	Mid-Career	South	Disabled	silence, assert	Proximity, Displacement	Strategic Silence	Reflective, Creative, Analytic	Experienced strategic silence in meetings; used creative reasoning to assert presence.
P16	18+ secondary education	South	Female	peer intimidation	Relational Deflection	STEM Gatekeeping	None	Felt restricted, embarrassed and limited in STEM program.
P17	Retiree	North	Ethnic Minority	undervalued, patterns	Gender Power Dynamics, Displacement	Economic Invisibility	Analytic, Reflective	Contributions to community work undervalued; used analytic reasoning to identify patterns.