Research Article

Prevalence and treatment effects of suicidal ideation and self-injurious behavior in children and adolescents in outpatient psychotherapy: A multicenter assessment

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ARTICLE INFO

ABSTRACT

Background: Suicidal ideation and self-injurious behaviors (SISIB) in children and adolescents are a major concern in clinical practice. Yet, little is known about the prevalence rates of SISIB in outpatient clinics and its response to routine psychotherapy. Therefore, the present study aims to assess the prevalence of SISIB and the changes in SISIB in a heterogeneous clinical outpatient sample of children and adolescents undergoing cognitive behavioral therapy in Germany.

Methods: The sample consists of $N = 5730$ child and adolescent outpatients, 54.05% female, mean age = 12.16 years (SD = 3.51). As metrics of SISIB, two items (Item 18 on self-injurious behavior and Item 91 on suicidal ideation) of the Youth Self Report (YSR/11–18R) and the Child Behavior Checklist (CBCL/6–18R) as caregiver report were used.

Results: Pretreatment, suicidal ideation was reported by 33.45% of patients and 15.39% of caregivers. Self-injurious behavior was reported pretreatment by 35.35% of patients and 20.16% of caregivers. Posttreatment, suicidal ideation was reported by 11.32% of patients and 5.25% of caregivers. Self-injurious behavior was reported posttreatment by 19.00% of patients and 9.43% of caregivers.

Conclusion: SISIB are very common in children and adolescents in outpatient settings. Prevalence rates are higher in self-reports than in caregiver reports, indicating the importance of assessing SISIB in children and adolescents

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themselves. After routine-care psychotherapy, a substantial proportion of patients report an amelioration of SISIB. These results indicate the importance of monitoring SISIB during treatment and of therapists being aware of risk assessment techniques and psychotherapy interventions targeting SISIB.

1. Introduction

Suicidal ideation and self-injurious behaviors (SISIB) in children and adolescents are major global public health problems (The Lancet Commission, Moran et al., 2024). Among adolescents, suicide is a leading cause of death worldwide (World Health Organization, 2024).

Suicidal ideation refers to thoughts of engaging in behavior intended to end one's own life and is one of the strongest risk factors for suicide attempts and suicide (Franklin et al., 2017).

Earlier onset of suicidal ideation and behavior is a robust predictor for ongoing suicidal ideation and behavior and further mental health problems (Whalen et al., 2015). According to a prospective, longitudinal study, both suicidal ideation only and suicidal behavior in childhood predicted adult suicidal thoughts and behaviors (Copeland et al., 2017). Suicidal ideation in itself is deeply distressing and therefore requires clinical attention (Klonsky et al., 2018). Self-injurious behavior, including nonsuicidal self-injury, is a strong risk factor for suicidal ideation and behavior (Castellví et al., 2017). In line with the UK National Institute for Health Care Excellence (NICE, 2022), we define self-injurious behavior including any intentional act of self-injury or self-poisoning irrespective of motivation or degree of suicidal intent but excluding suicidal ideation (Hawton et al., 2003) considering that many patients switch method (Owens et al., 2015).

Mental disorders, particularly depressive disorders, posttraumatic stress disorder, bipolar disorder, substance abuse disorders, and mental health issues such as sleep disturbances, acute intoxication, psychotic symptoms, impulsivity, and aggression are risk factors for suicide (Goldstein et al., 2008; Kelleher et al., 2013). Therefore, studying SISIB and its treatment in children and adolescents is paramount to reach the WHO target of decreasing the global suicide rate by one-third by 2030 compared to 2013 (WHO, 2021).

The prevalence rates of SISIB are substantial already in adolescence. Three German studies with school and community samples of adolescents reported lifetime prevalence rates ranging from 10.7–15.6% for suicidal ideation, 5–6.5% for suicide plans, and 3.4–9% for suicide attempts (Brunner et al., 2007; Donath et al., 2014; Voss et al., 2019). Voss et al. (2019) reported higher rates of suicide plans in females, and Donath et al. (2014) reported higher rates of lifetime suicide attempts in females. These rates are similar to the lifetime prevalence of suicide ideation, plans, and attempts in US adolescents of 12.1%, 4,0%, and 4.1%, respectively (Nock et al., 2013). From a clinical sample of admissions ($N = 3694$) to a German emergency department for child and adolescent psychiatry, rates as high as 57% have been reported (Kirkcaldy et al., 2006).

The gold standard for assessing mental health issues in children and adolescents is to attain a holistic view by considering self- and caregiver reports (De Los Reyes and Makol, 2022). This approach is also used in SISIB because caregiver awareness of suicidality is important for monitoring safety, restricting access, and obtaining appropriate treatment (Klaus et al., 2009). However, discrepancies between self- and caregiver-reported SISIB are well documented. Multiple studies show low agreement (Spears et al., 2023) with youth reporting more suicidal thoughts (DeVille et al., 2020; Jones et al., 2019) and more suicidal plans and attempts (Gratch et al., 2021; Klaus et al., 2009) than their caregivers. The discrepancy is higher regarding reported suicidal ideation compared to reported suicide attempts (Klaus et al., 2009).

How effective are current treatments of SISIB? Recent (practitioner) reviews recommend especially DBT-A (Witt et al., 2025; Sim et al., 2025) and combination treatments (Lu et al., 2025). They also suggest further development of CBT (Witt et al., 2025) and high quality RCTs

with larger sample sizes. A meta-analysis of therapeutic interventions for self-injury and suicidal ideation in adolescents relative to active control conditions, aggregating 25 randomized controlled trials, indicates significant but small to medium-sized effects (suicidal ideation $d = 0.31$, 95% CI 0.12–0.50, self-injury irrespective of suicidal intent $d = 0.13$, 95% CI 0.04–0.22) (Kothgassner et al., 2020). This meta-analysis also showed that active control interventions had large effect sizes in reducing self-harm, suicidal ideation, and depressive symptoms, warranting a closer look at the content and effect of treatment as usual. In a survey of child and adolescent psychotherapists, several interventions that follow international guidelines for SISIB were indicated, most commonly a risk assessment, a safety plan, and psychoeducation (In-Albon et al., 2025). SISIB are often treated indirectly using psychotherapy that focuses on mental disorders. A recent large meta-analysis revealed that both psychotherapy directly addressing suicidal ideation or suicide attempts and psychotherapy more generally addressing mental disorders are equally effective in suicide prevention. However, this study involved participants with a mean age of around 25 years, leaving open whether the results extend to children (Van Ballegooijen et al., 2025). Therefore, a complementary study on changes in SISIB in a clinical sample of children and adolescents seeking psychotherapy for mental disorders is warranted. Precise knowledge about the prevalence of suicidal ideation in routine care is crucial to inform psychotherapists and to implement risk assessment methods and treatment services of an appropriate type and scope. So far, no epidemiological analyses of large-scale German child and adolescent outpatient treatment samples on SISIB have been published. It should also be noted that this sample was not specifically recruited for SISIB prevalences or treatment effects, indicating that it is a genuine naturalistic study with ecological validity.

Thus, the aim of the present study was threefold: first, to assess the prevalence of self- and caregiver-reported suicidal ideation and self-injurious behavior (SISIB) in a heterogeneous clinical sample of children and adolescents aged between 6 and 18 years old in outpatient clinics in Germany. Second, to explore the self- and caregiver agreement on SISIB, and third, to assess changes in SISIB from both self- and caregiver perspectives after cognitive behavioral therapy in routine care.

The data were assessed in the KODAP project on the coordination of data collection and analysis at German university-based research and training outpatient clinics for psychotherapy for children and adolescents. KODAP is a nationwide German research collaboration including university outpatient clinics for children/adolescents and adults (In-Albon et al., 2019; Margraf et al., 2021).

2. Methods

2.1. Sample and procedure

The total sample consists of $N = 5730$,[1] outpatients ($n = 2629$, males, $n = 3097$, females, no information provided for sex assigned at birth: $n = 1$). The mean age pretreatment was M = 12.16 (SD = 3.51) years with a range of 6–18. They were seeking help at one of 18 outpatient clinics for children and adolescents. Most common primary diagnoses at pretreatment were emotional disorders with onset specific to childhood (F93, 16.96%), hyperkinetic disorders (F90, 15.02%), phobic anxiety

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[1] Patients outside of the 6–18 age range, patients for whom no age information was available, and one patient receiving therapy other than CBT were excluded.

disorders (F40, 14.01%), depressive episode (F32, 13.27%), and reaction to severe stress, and adjustment disorders (F43, 12.73%). In 36.09% of the patients, there was at least one comorbid disorder.

The data availability varies by scale, informant, and time of measurement (pretreatment vs. posttreatment). Therefore, the actual sample size is reported for each analysis separately.[2] The demographics of the subsamples with available pre- and posttreatment data are similar (cf. online Supplement). Pretreatment data includes self-reported data from 1727 patients (YSR/11–18R; age: M = 14.47 years, SD = 2.06, range = 11–18; sex at birth: 64.91% female; treatment status: 623 completed, 470 ongoing, 416 no data) and from 2966 caregiver-reports on their children (CBCL/6–18R; age of the patients: M = 11.93 years, SD = 3.44, range = 6–18; sex at birth: 52.83% female; treatment status: 1123 completed, 745 ongoing, 750 no data; caregiver role: 59.24% mother, 7.22% father, 3.17% other, 30.38% not reported). Considering the sample overlap, for 1589 (92.01%) of these, data from both self- and caregiver-report are available.

Treatments were conducted by licensed psychotherapists ($n = 47$) or clinicians in advanced CBT training ($n = 713$), who provided treatment with regular supervision. Treatments generally followed published CBT guidelines for each disorder. The number of treatment sessions reported for patients with any posttreatment SISIB data is M = 28.78 (SD = 18.06) patient sessions and M = 5.69 (SD = 4.78) caregiver sessions. The average time between pre-and posttreatment for patients with any posttreatment SISIB data is M = 494.51 days (SD = 254.86 days). All patients were informed that the participating outpatient clinic conducts research and provided written informed consent prior to participation. Assessments were conducted prior to treatment and again after treatment termination. The procedures of the overall KODAP project have been reviewed and approved by the Ethics Committee[1].

2.2. Instruments

2.2.1. Clinical interview

Clinical diagnoses according to DSM-5/ICD-10 were assigned using a validated structured clinical interview, the Diagnostic Interview for Mental Disorders in children and adolescents (Kinder-DIPS-OA, Margraf et al., 2017; Schneider et al., 2017). One primary diagnosis and up to four additional comorbid diagnoses could be recorded in the KODAP data.

2.2.2. Questionnaires

2.2.2.1. CBCL/6–18R and YSR/11–18R.
For the assessment of a broad range of psychopathology symptoms, the Child Behavior Checklist/6–18R for ages 6–18 (CBCL/6–18R, Döpfner et al., 2014a) as a caregiver report and the Youth Self Report/11–18R for ages 11–18 years[3] (YSR/11–18R, Döpfner et al., 2014b) as a self-report were conducted. The items are each to be rated on a three-point scale (2 = very true or often true, 1 = somewhat or sometimes true, 0 = not true) based on the prior 6 months. The reliability of the Total Problems Scale of the YSR/11–18R in the pretreatment data was excellent at (Cronbach's) $\alpha = 0.95$. The subscale reliability was $\alpha = 0.92$ for the internalizing and $\alpha = 0.87$ for the externalizing scale. The reliability of the Total Problems Scale of the CBCL/6–18R in the pretreatment data was excellent at $\alpha = 0.93$. The subscale reliability was $\alpha = 0.87$ for the internalizing and $\alpha = 0.91$ for the externalizing scale. Standardized t-values (M = 50, SD = 10) on the CBCL/6–18R and the YSR/11-8R (sub-)scales were computed using the norm data from a representative sample of German households collected in the mid-1990s (Döpfner et al., 2014a).

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[2] Or deducible from the degrees of freedom.

[3] As the YSR/11-18R self-report questionnaire is designed for youth aged 11 years and older, data from patients under the age of 11 was removed prior to the analysis.

2.2.2.2. Suicidal ideation and self-injurious behaviors.
Suicidal ideation was defined as self- or caregiver endorsement of 1 or 2 on Item 91 "I think about killing myself" (YSR/11–18R, Döpfner et al., 2014b) and "Talks about killing self" (CBCL/6–18R, Döpfner et al., 2014a). Self-injurious behavior was defined as self- or caregiver endorsement of a 1 or 2 on Item 18 "I deliberately try to hurt or kill myself" (YSR/11–18R) and "Deliberately harms self or attempts suicide" (CBCL/6–18R). These two CBCL items perform well in predicting self-injurious thoughts and behaviors (Van Meter et al., 2018). For preteens under the age of 11, only caregiver information on SISIB is available.

2.3. Statistical analyses

As the main goal of the study is to estimate prevalence rates and treatment effect sizes, the presented analyses are mostly exploratory and descriptive. As they do not include any formal hypothesis tests, they are not preregistered. *p*-values are reported in some places as a familiar heuristic indication of the signal to noise ratio. To separate inconsistency from bias, the interrater reliability of patients and caregivers was judged using a) Pearson's product-moment correlations (the response scale is assumed to be approximately metric) and b) the difference in prevalence rates between patients' and caregivers' reports. For an overview of the influence of the primary pretreatment diagnosis on changes in SISIB during treatment, individual mean comparisons (paired *t*-test, Cohen's d) were computed for groups defined by two-digit F-codes with a frequency of $n \geq 20$. To shed light on the combined effects of treatment, diagnosis, informant, and sex, we visualize the estimates of two pairs of linear mixed-effects models (LMEMs). First, to measure the influence of the primary pretreatment diagnosis on SISIB during treatment, a LMEM was estimated for each item (18 and 91) separately. Each model includes fixed effects of time (pretreatment, posttreatment), informant (self, caregiver), and primary pretreatment diagnosis, as well as a random effect of patient, which accounts for the nested data structure and distinguishes general (unexplained) heterogeneity in the level of SISIB between patients from the error term. All possible interactions (two-way and three-way) between the fixed effects were estimated. In this model, the primary retreatment diagnoses were first reduced to two-digit F-codes of the ICD-10 (e.g., to F93 from F93.1, F93.2, etc.). In a second step, all diagnoses except the five most frequent ones were collapsed to "other" to reduce the model to a well-interpretable level of complexity. Second, to analyze the influence of sex and informant on SISIB during treatment, another LMEM was estimated for each item (18 and 91) separately. Each model includes fixed effects of time (pretreatment, posttreatment), sex (female, male), and informant (self, caregiver), as well as a random effect of patient to account for the nested data structure. All possible interactions (two-way and three-way) between the fixed effects were estimated. Since the log-likelihood estimation of LMEM parameters can make use of incomplete cases, all available data points were included in the estimation of LMEMs.

All analyses were carried out using R version 4.4.2 (R Core Team, 2024). The mixed linear models were estimated using the package lme4 (Bates et al., 2015). Several additional details can be found in the online Supplement. The complete code underlying individual reported values, figures, and tables can be found on the osf.io page [https://osf.io/y2njq/].

3. Results

The prevalence of suicidal ideation and self-injurious behavior is presented in Table 1. At pretreatment, self-injurious behavior was reported by 34.4% of patients and by 20.2% of caregivers. Suicidal ideation was reported by 33.5% of patients and by 15.4% of caregivers. The presence of SISIB, according to the self-report, is higher in females compared to males (all $p < .001$). In the caregiver-report, suicidal ideation did not differ by sex, $\chi^2(2) = 2.71, p = .26, n = 2923$, but self-injurious behavior did, $\chi^2(2) = 56.93, p \leq 0.001, n = 2941$. A subsequent

Table 1
Frequency (percent) of suicidal ideation and self-injurious behavior pre- and posttreatment reported by patients (YSR/11–18R) and caregivers (CBCL/6–18R).

	Total			Female			Male		
	>0	2	n	>0	2	n	>0	2	n
Pretreatment									
11–18: YSR 18: I deliberately try to hurt or kill myself	35.4	17.1	1717	45.8	22.7	1115	15.8	6.7	601
6–18: CBCL 18: deliberately harms self or attempts suicide	20.2	6.1	2942	25.4	7.9	1551	14.2	4.2	1390
11–18: CBCL 18: deliberately harms self or attempts suicide	25.0	7.8	1785	30.6	9.4	1116	15.6	5.1	668
11–18: YSR 91: I think about killing myself	33.5	11.4	1704	40.7	14.2	1105	20.1	6.4	598
6–18: CBCL 91: talks about killing self	15.4	2.7	2924	16.4	2.8	1544	14.3	2.7	1379
11–18: CBCL 91: talks about killing self	16.9	2.9	1772	18.5	3.0	1109	14.4	2.7	662
Posttreatment									
11–18: YSR 18: I deliberately try to hurt or kill myself	19.0	5.9	679	25.1	8.1	442	7.6	1.7	237
6–18: CBCL 18: deliberately harms self or attempts suicide	9.4	2.1	1092	12.3	2.7	561	6.4	1.5	531
11–18: CBCL 18: deliberately harms self or attempts suicide	12.3	2.3	617	16.1	3.0	372	6.5	1.2	245
11–18: YSR 91: I think about killing myself	11.3	1.6	680	14.4	2.3	443	5.5	0.4	237
6–18: CBCL 91: talks about killing self	5.3	0.6	1085	5.5	0.7	559	4.9	0.4	526
11–18: CBCL 91: talks about killing self	4.7	0.7	613	5.6	0.8	372	3.3	0.4	241

Note. >0 = somewhat or sometimes true & very true or often true; 2 = very true or often true; the age range in years is indicated at the beginning of each row; YSR = Youth Self-Report (YSR/11–18R), CBCL = Child Behavior Checklist (CBCL/6–18R).

analysis of the caregiver report, considering distinct age ranges of 6–10 years and 11–18 years, a significant difference was found in self-injurious behavior between males and females within the 11–18 age group, $\chi^2(2) = 50.77$, $p \leq 0.001$, $n = 1784$. Consequently, there is no indication of any differences by sex at the age of 6–10 years. To account for the difference in minimum inclusion age between the self-report and the caregiver report, Table 1 also shows the prevalence rates in the caregiver report for patients aged ≥11. In patients with SISIB, the most frequent primary diagnoses pretreatment were depressive disorders, phobic anxiety disorders, and reaction to severe stress, and adjustment disorders (more details in the online supplement).

3.1. Age distribution

Fig. 1 shows the relative frequency of SISIB by age, informant, and time. In the self-report, a steep increase in SISIB can be seen between the ages of 11 and 15. The caregiver-report allows computing prevalences of SISIB in preteens. At pretreatment, the caregiver-reported prevalence rate (at least "somewhat or sometimes true") in children under the age of eleven years is 12.62% ($n = 1157$) for self-injurious behavior and 13.02% ($n = 1152$) for suicidal ideation in children under the age of eleven. In children aged 11–12 years, the self-reported prevalence rates are 11.17% for self-injurious behavior ($n = 376$) and 17.87% for suicidal ideation ($n = 375$). The caregiver-reported prevalence rates are 16.45% for self-injurious behavior ($n = 462$) and 17.07% for suicidal ideation ($n = 451$).

3.2. Self- and caregiver-report agreement

A marked discrepancy between the self- and caregiver-reported prevalence of the SISIB symptoms could already be seen in Table 1 and Fig. 1. The correlations between the self- and (first) caregiver-reports are $r = 0.45$ (95% CI = [0.41, 0.49]; $t(1560) = 19.94$, $p < .001$) for self-injurious behavior (Item 18) and $r = 0.25$ (95% CI = [0.20, 0.29]; $t(1544) = 9.95$, $p < .001$) for suicidal ideation (Item 91). The self-caregiver agreement also differs based on the patient's sex and the caregiver's sex (Table 2, $n = 81$–580). The agreement is particularly low between fathers and their sons (Item 18: $r = 0.14$ n.s. and Item 91: $r = 0.09$ n.s.). In sum, the self- and caregiver reports are both discrepant (different prevalence rates) and inconsistent (little agreement).

3.3. Changes of suicidal ideation and self-injurious behavior after treatment

Patients with available pre- and posttreatment data ($n = 618$) reported suicidal ideation (YSR/11–18R: Item 91 > 0) with a prevalence of

28.0% pretreatment and 11.7% posttreatment (Table 4). In the same group, self-injurious behavior (YSR/11–18R: Item 18 > 0, Table 3) was reported by 30.3% of patients' pretreatment and by 19.4% posttreatment.

In cases with both pre- and posttreatment caregiver reports available, suicidal ideation (CBCL/6–18R: Item 91 > 0, $n = 1027$) was reported by 13.5% of caregivers at pretreatment and by 5.2% at posttreatment. Self-injurious behavior (CBCL/6–18R: Item 18 > 0, $n = 1035$) was reported by 17.4% of caregivers at pretreatment and by 9.3% at posttreatment.[4]

Irrespective of the primary pretreatment diagnosis, there is a substantial significant reduction in SISIB from pre- to posttreatment in the self-report with effect sizes of Cohen's $d = 0.26$ (YSR/11–18R Item 18) and 0.34 (YSR/11–18R Item 91) and in the caregiver-report with effect sizes of Cohen's $d = 0.18$ (CBCL/6–18R Item 18) and $d = 0.23$ (CBCL/6–18R Item 91). Reductions in SISIB from pre- to posttreatment differ according to primary diagnoses (Tables 3 and 4). An increase in suicidal ideation and self-injurious behavior in the self-report from pre- to posttreatment was seen in 5.7% and 7.9% of the total sample. Both pre- and posttreatment prevalence of SISIB differ substantially between diagnoses. The data also hint toward differences in the size of the treatment effects.

The estimated effect of the treatment on SISIB for the five most frequent diagnoses is shown in Fig. 2. The parameter estimates and other details on the underlying linear mixed-effects models can be found in the online Supplement. The highest pretreatment prevalence of SISIB is found in patients with depressive episodes, who also show the most (absolute) improvement during treatment. A similarly strong improvement can be seen in patients with reaction to severe stress, and adjustment disorders. Overall, Fig. 2 clearly shows the strong relationship between SISIB and the pretreatment diagnosis. The models explain 42% of the variance of item 18 and 30% of the variance of item 91.

The influence of patients' sex can be seen in Fig. 3, with female patients showing both higher prevalence rates and a larger (absolute) improvement during treatment. All main effects and interactions in the underlying models are significant at $p < .05$. The models explain 41% of

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[4] Data from both self- and caregiver reports are available for 496 patients before and after treatment. This indicates that 79.11% of patients in the self-report sample are also represented in the caregiver-report sample. Note that the caregiver-report sample also includes patients under the age of 11.
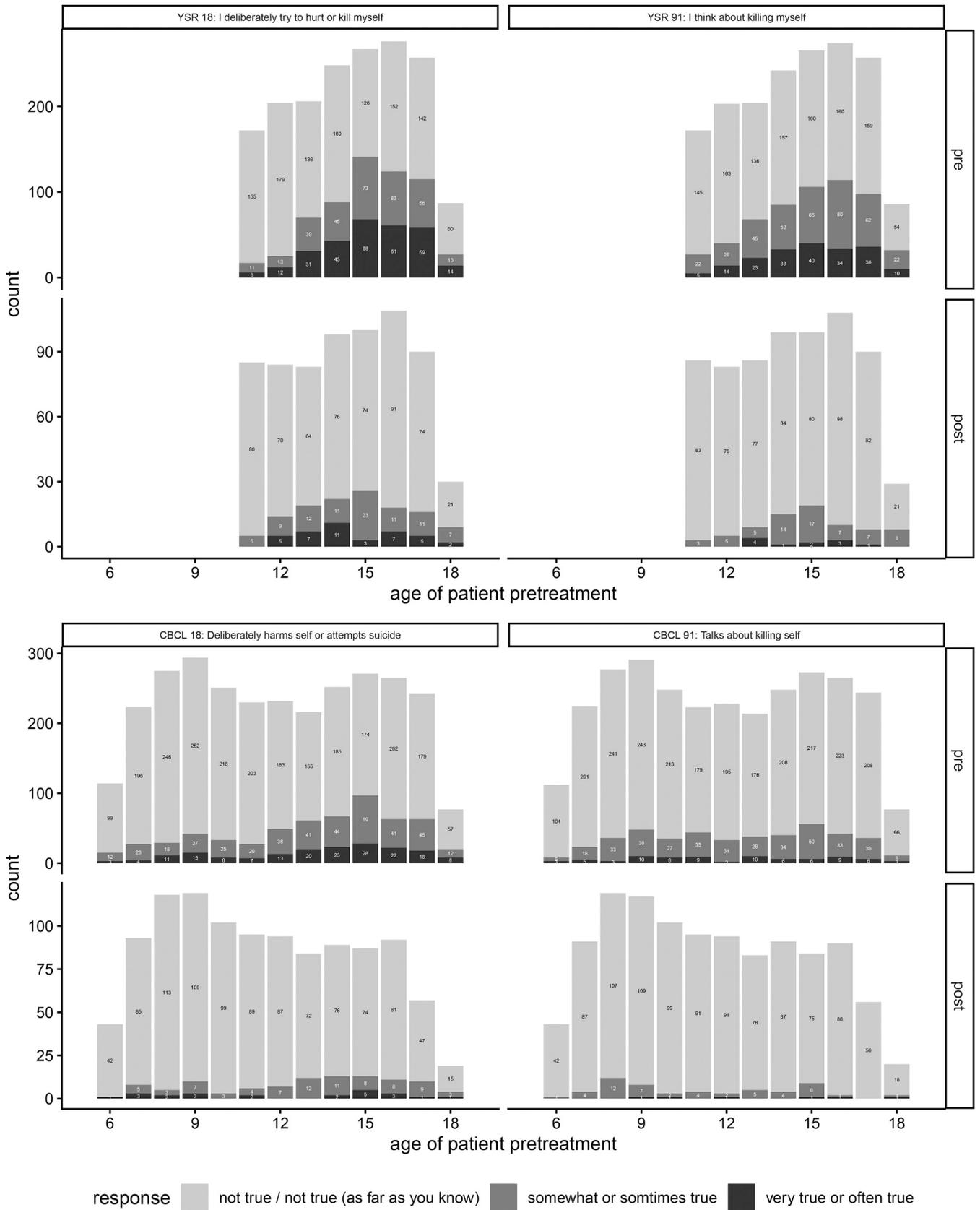
Fig. 1. Frequency of SISIB by age, informant, and time of measurement.

Table 2

Agreement between pretreatment self-ratings (YSR/11–18R) and caregiver ratings (CBCL/6–18R) by parental sex and patient's sex (at birth).

	Father	Mother
Self-injurious behavior (item 18)		
Male	0.14 [−0.08,0.35]	0.31 [0.22,0.41]
Female	0.49 [0.36,0.60]	0.56 [0.51,0.62]
Suicidal ideation (item 91)		
Male	0.09 [−0.13,0.30]	0.26 [0.16,0.35]
Female	0.32 [0.17,0.45]	0.31 [0.24,0.38]

Note. Values indicate correlations and their 95% confidence intervals; n = 81–580.

Table 3

Change of self-injurious behavior (item 18) by diagnosis.

	n	Pre	Post	t-Test	Cohens d	det
Self						
Total	618	30.3% (13.6%) 0.44 (0.72)	19.4% (5.8%) 0.25 (0.55)	t(617) = 6.35 p < .001	0.26 [0.18,0.34]	7.9%
Depressive episode	121	59.5% (30.6%) 0.90 (0.84)	35.5% (10.7%) 0.46 (0.68)	t(120) = 5.04 p < .001	0.46 [0.27,0.64]	10.7%
Phobic anxiety disorders	122	23.0% (9.0%) 0.32 (0.63)	14.8% (3.3%) 0.18 (0.46)	t(121) = 2.88 p = .005	0.26 [0.08,0.44]	5.7%
Other anxiety disorders	21	19.0% (9.5%) 0.29 (0.64)	9.5% (0.0%) 0.10 (0.30)	t(20) = 1.28 p = .214	0.28 [−0.16,0.71]	4.8%
Reaction to severe stress, and adjustment disorders	61	34.4% (11.5%) 0.46 (0.70)	8.2% (3.3%) 0.11 (0.41)	t(60) = 3.82 p < .001	0.49 [0.22,0.75]	4.9%
Eating disorders	29	41.4% (20.7%) 0.62 (0.82)	31.0% (13.8%) 0.45 (0.74)	t(28) = 1.54 p = .134	0.29 [−0.09,0.66]	6.9%
Attention-deficit hyperactivity disorders	65	15.4% (7.7%) 0.23 (0.58)	13.8% (4.6%) 0.18 (0.50)	t(64) = 0.60 p = .553	0.07 [−0.17,0.32]	6.2%
Emotional disorders with onset specific to childhood	58	17.2% (1.7%) 0.19 (0.44)	17.2% (6.9%) 0.24 (0.57)	t(57) = −0.57 p = .568	−0.08 [−0.33,0.18]	10.3%
Oth behav/emotn disord w onset usly occur in chldhd and adol	22	13.6% (9.1%) 0.23 (0.61)	0.0% (0.0%) 0.00 (0.00)	t(21) = 1.74 p = .096	0.37 [−0.07,0.80]	0.0%
Caregiver						
Total	1035	17.4% (3.9%) 0.21 (0.49)	9.3% (2.1%) 0.11 (0.38)	t(1034) = 5.77 p < .001	0.18 [0.12,0.24]	5.8%
Depressive episode	106	42.5% (13.2%) 0.56 (0.72)	18.9% (3.8%) 0.23 (0.50)	t(105) = 4.52 p < .001	0.44 [0.24,0.64]	7.5%
Phobic anxiety disorders	135	12.6% (0.7%) 0.13 (0.36)	7.4% (2.2%) 0.10 (0.36)	t(134) = 1.09 p = .277	0.09 [−0.08,0.26]	4.4%
Other anxiety disorders	20	25.0% (5.0%) 0.30 (0.57)	15.0% (0.0%) 0.15 (0.37)	t(19) = 0.90 p = .379	0.20 [−0.24,0.64]	15.0%
Reaction to severe stress, and adjustment disorders	88	20.5% (3.4%) 0.24 (0.50)	8.0% (1.1%) 0.09 (0.33)	t(87) = 2.48 p = .015	0.26 [0.05,0.48]	3.4%
Eating disorders	25	28.0% (4.0%) 0.32 (0.56)	20.0% (8.0%) 0.28 (0.61)	t(24) = 0.30 p = .770	0.06 [−0.33,0.45]	8.0%
Attention-deficit hyperactivity disorders	194	14.9% (2.6%) 0.18 (0.44)	7.2% (3.6%) 0.11 (0.41)	t(193) = 1.83 p = .069	0.13 [−0.01,0.27]	4.6%
Emotional disorders with onset specific to childhood	214	8.9% (1.4%) 0.10 (0.35)	6.1% (0.9%) 0.07 (0.29)	t(213) = 1.09 p = .275	0.07 [−0.06,0.21]	4.7%
Oth behav/emotn disord w onset usly occur in chldhd and adol	60	8.3% (3.3%) 0.12 (0.42)	6.7% (0.0%) 0.07 (0.25)	t(59) = 0.90 p = .370	0.12 [−0.14,0.37]	5.0%

Note. Caregiver-report given by first caregiver; statistics pre- (pre) and posttreatment (post): prevalence (1 = somewhat or sometimes true or 2 = very true or often true), in brackets: prevalence severe (2 = very true or often true), mean (SD); Cohen's d is reported with [95% CI]; det = percent of patients with deteriorated symptom posttreatment compared to pretreatment; primary diagnoses appearing fewer than 20 times are not displayed; only cases with complete data included.

children and adolescents between 6 and 18 years old in outpatient clinics in Germany. Second, to explore the agreement between self- and caregiver reports on SISIB, and third, to assess changes in SISIB from the perspectives of both the self- and caregivers after cognitive behavioral therapy in routine care.

This study showed high six-months prevalences of self-reported suicidal ideation (33.5%) and self-injurious behavior (35.4%) in adolescents (age: 11–18 years, M = 14.5 years). 11.4% and 17.1% of the adolescents reported severe SISIB (very true or often true). The prevalence rates in the current outpatient adolescent sample are expectedly higher than in community samples. Brunner et al. (2007) found a self-reported prevalence of suicidal ideation of 14.4% in a community

the variance of item 18 and 28% of the variance of item 91.[5]

4. Discussion

The aim of the present study was threefold: first, to assess the prevalence of self- and caregiver-reported suicidal ideation and self-injurious behavior (SISIB) in a heterogeneous clinical sample of

sample of German ninth-graders (mean age M = 14.9 years). Voss et al. (2019) reported a lifetime prevalence rate of 11.5% for suicidal behavior and 10.7% of suicidal ideation in a German community sample (age 14–21 years, M = 17.9 years). In the USA, Nock et al. (2013) found a self-reported lifetime prevalence in 13- to 18-year-old adolescents of suicidal ideation of 12.1% (suicide plans: 4%, suicide attempts: 4.1%).

In female adolescents, the self-reported rates of suicidal ideation and self-injurious behavior in the current study were at least twice as high as in male adolescents. This is in line with the studies of Nock et al. (2013) and Voss et al. (2019) on suicidal ideation, Brunner et al. (2014) on self-injurious behavior, and a meta-analysis of gender differences in suicide attempts in adolescents (Miranda-Mendizabal et al., 2019).

The caregiver-reported prevalence rates are 20.2% for self-injurious

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[5] In a similar model, the number of treatment sessions was not found to affect the treatment effect (item 18: estimated change in SISIB over time per additional session = −0.001, SE = 0.002; item 91: estimate = 0.000, SE = 0.002; details see online supplement).

Table 4

Change of suicidal ideation (item 91) by diagnosis.

	n	Pre	Post	t-Test	Cohens d	det
Self						
Total	618	28.0% (8.1%) 0.36 (0.63)	11.7% (1.8%) 0.13 (0.39)	t(617) = 8.51 p < .001	0.34 [0.26,0.42]	5.7%
Depressive episode	120	56.7% (20.0%) 0.77 (0.76)	21.7% (4.2%) 0.26 (0.53)	t(119) = 6.71 p < .001	0.61 [0.42,0.81]	8.3%
Phobic anxiety disorders	122	17.2% (2.5%) 0.20 (0.46)	13.1% (0.8%) 0.14 (0.37)	t(121) = 1.30 p = .195	0.12 [−0.06,0.30]	7.4%
Other anxiety disorders	21	28.6% (9.5%) 0.38 (0.67)	4.8% (4.8%) 0.10 (0.44)	t(20) = 1.55 p = .137	0.34 [−0.11,0.77]	4.8%
Reaction to severe stress, and adjustment disorders	62	29.0% (12.9%) 0.42 (0.71)	6.5% (0.0%) 0.06 (0.25)	t(61) = 3.85 p < .001	0.49 [0.22,0.75]	3.2%
Eating disorders	29	31.0% (10.3%) 0.41 (0.68)	10.3% (0.0%) 0.10 (0.31)	t(28) = 2.53 p = .017	0.47 [0.08,0.85]	3.4%
Attention-deficit hyperactivity disorders	65	10.8% (1.5%) 0.12 (0.38)	3.1% (3.1%) 0.06 (0.35)	t(64) = 0.94 p = .350	0.12 [−0.13,0.36]	3.1%
Emotional disorders with onset specific to childhood	60	6.7% (0.0%) 0.07 (0.25)	5.0% (1.7%) 0.07 (0.31)	t(59) = 0.00 p = 1.000	0.00 [−0.25,0.25]	3.3%
Oth behav/emotn disord w onset usly occur in chldhd and adol	23	17.4% (4.3%) 0.22 (0.52)	17.4% (0.0%) 0.17 (0.39)	t(22) = 0.44 p = .665	0.09 [−0.32,0.50]	8.7%
Caregiver						
Total	1027	13.5% (2.3%) 0.16 (0.42)	5.2% (0.6%) 0.06 (0.26)	t(1026) = 7.29 p < .001	0.23 [0.17,0.29]	2.9%
Depressive episode	105	26.7% (4.8%) 0.31 (0.56)	7.6% (0.0%) 0.08 (0.27)	t(104) = 3.98 p < .001	0.39 [0.19,0.59]	4.8%
Phobic anxiety disorders	132	7.6% (0.8%) 0.08 (0.30)	5.3% (1.5%) 0.07 (0.31)	t(131) = 0.43 p = .671	0.04 [−0.13,0.21]	4.5%
Other anxiety disorders	21	14.3% (0.0%) 0.14 (0.36)	0.0% (0.0%) 0.00 (0.00)	t(20) = 1.83 p = .083	0.40 [−0.05,0.84]	0.0%
Reaction to severe stress, and adjustment disorders	89	12.4% (4.5%) 0.17 (0.48)	3.4% (0.0%) 0.03 (0.18)	t(88) = 2.95 p = .004	0.31 [0.10,0.52]	1.1%
Eating disorders	25	4.0% (0.0%) 0.04 (0.20)	0.0% (0.0%) 0.00 (0.00)	t(24) = 1.00 p = .327	0.20 [−0.20,0.59]	0.0%
Attention-deficit hyperactivity disorders	194	11.9% (2.1%) 0.14 (0.40)	7.7% (0.5%) 0.08 (0.29)	t(193) = 2.06 p = .041	0.15 [0.01,0.29]	4.1%
Emotional disorders with onset specific to childhood	211	13.3% (1.4%) 0.15 (0.39)	3.8% (0.0%) 0.04 (0.19)	t(210) = 3.80 p < .001	0.26 [0.12,0.40]	2.4%
Oth behav/emotn disord w onset usly occur in chldhd and adol	58	12.1% (0.0%) 0.12 (0.33)	5.2% (0.0%) 0.05 (0.22)	t(57) = 1.66 p = .103	0.22 [−0.04,0.48]	1.7%

Note. Caregiver-report given by first caregiver; statistics pre- (pre) and posttreatment (post): prevalence (1 = somewhat or sometimes true or 2 = very true or often true), in brackets: prevalence severe (2 = very true or often true), mean (SD); Cohen's d is reported with [95% CI]; det = percent of patients with deteriorated symptom posttreatment compared to pretreatment; primary diagnoses appearing fewer than 20 times are not displayed; only cases with complete data included.

behaviors and 15.4% for suicidal thoughts. In contrast to the self-report (11–18 years), the age range of the caregiver-report extends from 6 to 18 years. Of particular concern is that caregivers reported prevalence rates of 12.6% for self-injurious behavior and 13.0% for suicidal thoughts in 6–10-year-old children. The discrepancy between self-report and caregiver report in SISIB, particularly among adolescents, may indicate an underestimation in childhood. However, since children are likely to spend more time with their caregivers than adolescents, we would expect the discrepancy to be smaller for children than for adolescents. Our results seem to point in that direction. For children aged 11–12 years, the self-report prevalence rates were 17.9% for suicidal ideation and 11.2% for self-injurious behavior, with similar or higher prevalence rates reported by caregivers in this age group (17.1% suicidal ideation, 16.5% self-injurious behavior). In meta-analysis of self-injurious thoughts and behaviors in preadolescents (aged 13 years or younger) in community samples from 58 studies, the prevalence rate of lifetime suicidal thoughts was 15.1% (suicide attempts: 2.6%, non-suicidal self-injury: 6.2%) (Liu et al., 2022). In addition, their results indicated that approximately 17% of preadolescents with suicidal ideation will progress to suicide attempts. Similarly, Geoffroy et al. (2022) meta-analysis on community samples of children aged 12 years and under found lifetime prevalence rates of suicidal ideation and behaviors of 11.6% and of self-injurious behavior of 2.1%.

In line with Geoffroy et al. (2022) meta-analysis, no significant sex differences were identified in the present study in the caregiver reports in the 6–10 age group. Given the adverse consequences of SISIB in preadolescents, further research in this area is warranted. Overall, a concerning number of children and adolescent patients in outpatient clinics experience suicidal ideation and perform self-injurious behavior.

Addressing the second goal, the caregiver-reported rates are about half of the self-reported rates. Although the caregiver-report includes a wider age range (CBCL/6–18R: 6–18 years) compared to the self-report (age range of YSR/11–18R: 11–18 years), most of the difference between reports persists when comparing children at the age of 11–18 only. The greatest discrepancy was found between fathers' and sons' reports. This discrepancy is not unexpected and is in line with previous studies, indicating that the caregiver report on SISIB is not sensitive enough. DeVille et al. (2020) also found a high rate of discordance between parent and child reports of suicidal ideation and behavior, with more than 75% of children reporting suicidal ideation or behavior lacking caregiver concordance. Overall, most caregivers of children and adolescents with SISIB are unaware or otherwise unable to report information about their child's suicidality, which may decrease the likelihood of a recommendation for continued treatment (Van Bodegom et al., 2023). Similarly, across their meta-analytic sample of studies, Geoffroy et al. (2022) found a more than doubled suicidal ideation prevalence rate when children were included as informants. Spears et al. (2023) provide three possible explanations accounting for the discrepancy. First, the discrepancies may be attributable to characteristics of the relationship between informants. When interpersonal tension exists between children and their parents, parents may have limited insight into their child's internal experiences, including suicidal thoughts and
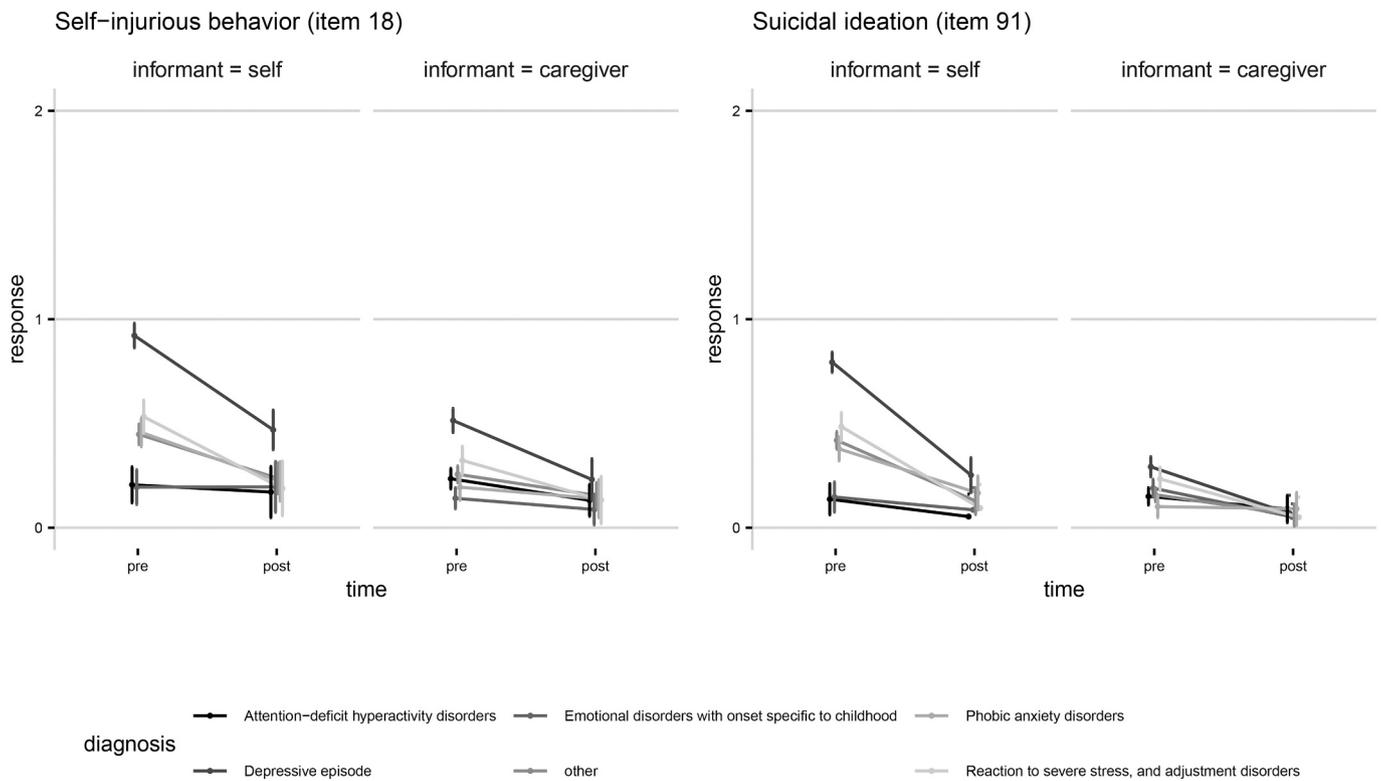
Fig. 2. Predicted values of the mixed linear models of SISIB by primary pretreatment diagnosis; errorbars indicate 95% confidence intervals; the estimates are based on 6328 values of 3075 patients (YSR/11-18R / CBCL/6-18R item 18) and 6295 values of 3064 patients (YSR/11-18R / CBCL/6-18R item 91).
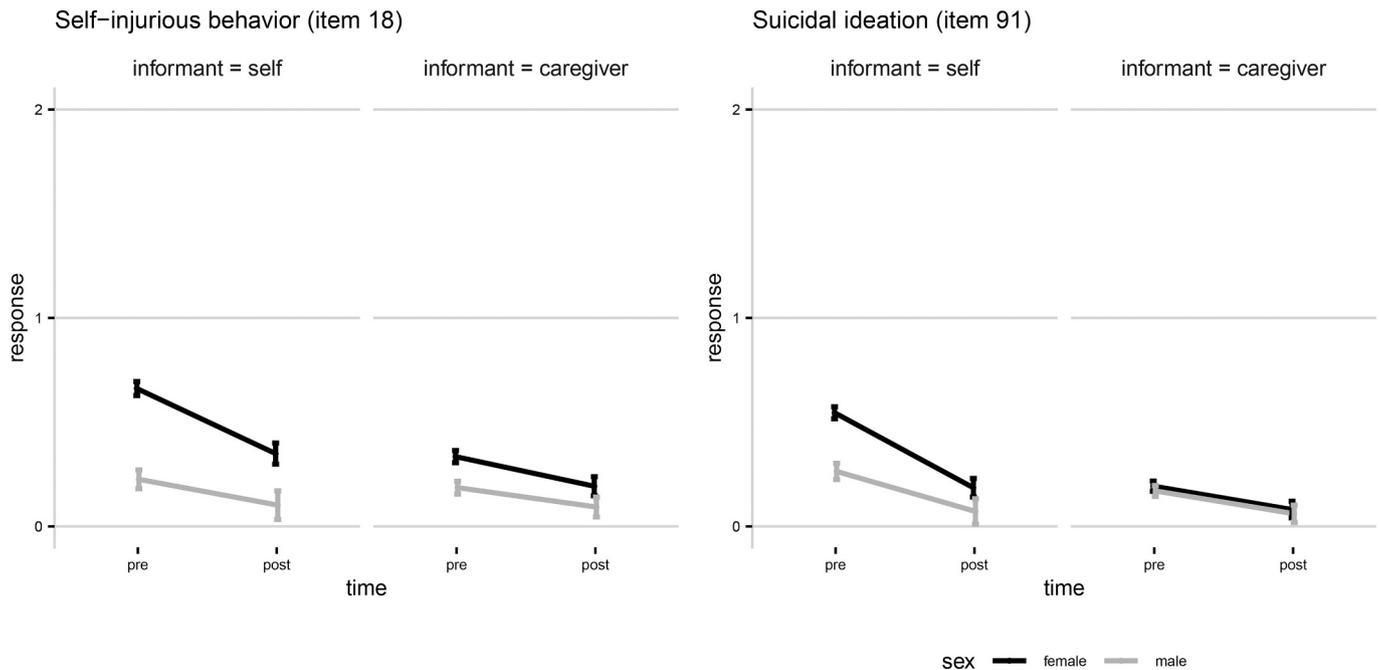

Fig. 3. Mixed linear models of SISIB by patient's sex; errorbars indicate 95% confidence intervals; the estimates are based on 6428 values of 3138 patients (YSR/11-18R / CBCL/6- 18R item 18) and 6391 values of 3125 patients (YSR/11-18R / CBCL/6-18R item 91).

behaviors. This is in line that lower perceived family support has been associated with greater discordance across parent- and self-reported suicide plans (Klaus et al., 2009) as well as family communication was found to be poor and family stress high in adolescents with nonsuicidal self-injury (Tschan et al., 2015; Tschan et al., 2022). Second, characteristics of the informants, such as psychopathology of the caregiver, age

of the patient (Klaus et al., 2009), and third, characteristics of suicidal thoughts and behaviors as suicidal ideation are less observable than the potential physical act of a suicide attempt.

An important clinical implication is the need to ensure that suicide and self-injury assessments are conducted directly with children and adolescents across all ages and irrespective of their diagnoses,

employing instruments that are age-appropriate, and not only with their caregivers. For this, it is important to note that the use of self-report questionnaires is an important assessment method when screening for suicidality, as suicidality may be underreported in clinical interviews (Vera-Varela et al., 2022). Assessments should also be conducted irrespective of the reasons utilizing mental health services, given that more than half of adolescents engaging in NSSI did so for reasons other than NSSI or suicidality. Females were more likely to use services because of symptoms of depression/SISIB than males (Steinhoff et al., 2020). Thus, we agree with Spears et al. (2023) that there is a need for evidence-based development and use of assessments to advance youth suicide research toward innovative approaches to capture the complexity of experiencing, reporting, and interpreting SISIB.

The third aim of this study was to examine changes in SISIB from pre- to posttreatment. Results indicate significant decreases in self-reported and caregiver-reported SISIB, with small to moderate effect sizes (d = 0.34 [0.26,0.42] for self-reported suicidal ideation, d = 0.26 [0.18,0.34] for self-reported self-injurious behavior). This compares with the KODAP adult sample that showed a treatment effect on suicidal ideation of 0.36 (Teismann et al., 2024a). The current effect sizes correspond to a decrease in self-reported prevalences from 30.3% to 19.4% (self-injurious behavior) and from 28.0% to 11.7% (suicidal ideation), with an even stronger relative decrease of the rates of severe symptoms (self-injurious behavior: 13.6% to 5.8%, suicidal ideation: 8.1% to 1.8%).

As the treatment was CBT-based as usual in university outpatient clinics, we do not know whether SISIB-specific interventions were provided, or whether SISIB was a treatment target. The results of In-Albon et al. (2025) indicate that child and adolescent psychotherapists follow international guidelines in the choice of interventions when suicidal thoughts and behavior are present and disclosed. Our results align with the results of the meta-analysis of Van Ballegooijen et al. (2025), which showed, for adults, equal efficacy of psychotherapy that is specific for suicidal ideation or suicide attempts, as well as psychotherapy that addresses general mental disorders. Indirect treatments that may address suicidality to a limited extent are beneficial for patients who do not seek treatment for SISIB or do not disclose it. However, a comparison between indirect and suicide-specific treatment with children and adolescents is lacking so far. Beyond the observed beneficial treatment responses, it is evident that further improvements are imperative, considering the substantial number of non-responding patients. One way of improving treatments and implementing them successfully is to engage youth with lived experience of SISIB in the co-design of measures and interventions (Prescott and Hetrick, 2025).

Our study has several limitations. First, SISIB were assessed using only two items from the YSR/11–18R as a self-report and the CBCL/6–18R as a caregiver report. Although the CBCL/6–18R and YSR/11–18R are instruments that help identify youth who have engaged in self-injurious behavior and may be at risk for future suicidality (Van Meter et al., 2018), it must be criticized that the CBCL/YSR-Item 18 does not distinguish NSSI from suicidal behavior, in line with the NICE definition of self-harm (2022) and Hawton et al. (2003). Even though NSSI and suicidality are associated, the behavior is different in frequency, methods, and functions (Klonsky et al., 2016; Muehlenkamp et al., 2019). Further, the CBCL/6–18R-item 91 conflates suicidal ideation and suicidal gestures (talking about killing self). Considering the brevity of measurement by only a single item for suicidal ideation and self-injurious behavior, the assessment of suicidal ideation with a single item has been used in several studies, indicating that this is adequate for screening purposes (Campos et al., 2023; Teismann et al., 2024b; Van Meter et al., 2018). Second, there is no control group, so it is not possible to draw clear conclusions about whether the reduction in SISIB was caused by treatment, the passage of time, or some confounding factors. Third, the specific contents of the treatments within the umbrella of CBT were not assessed, particularly whether SISIB was treated specifically or non-specifically. Fourth, the sample exclusively included CBT patients from university-based outpatient clinics. Thus, generalizability of our

findings to other psychotherapeutic modalities is unclear. In addition, the Cochrane review (Witt et al., 2021) indicates that the quality of the available evidence for treating suicidal ideation and behavior was rated as moderate or very low, which is also indicated in more recent reviews (Sim et al., 2025; Witt et al., 2025). Due to the small number of identified trials, there is only uncertain evidence regarding psychosocial interventions for children and adolescents engaging in SIB, although positive evidence is available for DBT-A and to a lower degree for CBT (Kothgassner et al., 2020; Lu et al., 2025; Sim et al., 2025; Witt et al., 2025). Fifth, the current sample is heterogeneous. While this is a side effect of its ecological validity, it makes it harder to isolate effects (internal validity). Beyond age, sex, informant, and number of treatment sessions, future research will need to assess the effects of other sample characteristics that may impact the (reported) prevalence of SISIB and treatment outcomes. Sixth, the KODAP pretreatment assessment measures sex assigned at birth (dichotomously). It does not include biological sex or gender identity at the time of measurement. Therefore, the reported effects of sex should not be misinterpreted as gender differences, although a stochastic relationship can be assumed. This assessment does not allow for specific analysis of SISIB in transgender or gender-diverse children, who are a known high-risk group (Austin et al., 2022; De Graaf et al., 2022). On the YSR/11–18R and CBCL/6–18R items 18 and 91, transgender adolescents referred for gender dysphoria showed an equal or up to 5.5 times higher prevalence of SISIB compared to the (clinically) referred normative samples of the YSR/11–18R and CBCL/6–18R (De Graaf et al., 2022).

In summary, the present study, which includes a large state-of-the-art diagnosed clinical sample, demonstrates that SISIB are prevalent and of concern in outpatient children and adolescents. The results highlight the importance of assessing suicidality in patients of all ages and diagnoses, with a particular emphasis on self-reported data from children and adolescents. This is due to the presence of substantial discrepancies between self-reported and caregiver reports, which underscores the need for comprehensive, objective, and age-appropriate assessments. The findings also indicate a considerable amelioration of SISIB across various mental disorders when undergoing CBT.

CRediT authorship contribution statement

Tina In-Albon: Writing – review & editing, Writing – original draft, Supervision, Project administration, Methodology, Funding acquisition, Conceptualization. **Nils Petras:** Writing – review & editing, Writing – original draft, Visualization, Methodology, Formal analysis, Data curation. **Laura Kraus:** Writing – review & editing. **Georg W. Alpers:** Writing – review & editing, Project administration. **Hanna Christiansen:** Writing – review & editing, Supervision, Project administration. **Sören Friedrich:** Writing – review & editing, Project administration. **Julia Kalmar:** Writing – review & editing, Project administration. **Karen Krause:** Writing – review & editing, Project administration. **Tania M. Lincoln:** Writing – review & editing, Supervision, Project administration. **Wolfgang Lutz:** Writing – review & editing, Supervision, Project administration. **Anna van der Meer:** Writing – review & editing, Project administration. **Babette Renneberg:** Writing – review & editing, Project administration. **Zina Rensing:** Writing – review & editing, Project administration. **Kati Roesmann:** Writing – review & editing, Project administration. **Julian Rubel:** Writing – review & editing, Supervision, Project administration. **Silvia Schneider:** Writing – review & editing, Project administration. **Julian Schmitz:** Writing – review & editing, Project administration. **Susan Schwarz:** Writing – review & editing, Project administration. **Rudolf Stark:** Writing – review & editing, Supervision, Project administration, Funding acquisition. **Tobias Teismann:** Writing – review & editing, Supervision. **Brunna Tuschen-Caffier:** Writing – review & editing, Project administration. **Julia Velten:** Writing – review & editing, Supervision, Project administration, Funding acquisition. **Katja Werheid:** Writing – review & editing, Supervision, Project administration. **Daniela Schwarz:**

Writing – review & editing, Project administration.

Statement of ethics

This study was reviewed and approved by the Ethics Committee of the German Psychological Society (DGPs) approval number [DGPs 2020-12-15VA]. Written informed consent was obtained from participants or their parent.

Funding sources

Declaration of competing interest

The authors have no conflicts of interest to declare.

Acknowledgement

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jad.2026.121395.

Data availability

Data will be made available on request.

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