

## Bilaga till rapport

Riktade interventioner för att förebygga suicidförsök och självskadebeteende hos barn och ungdomar/Prevention of self-harm and suicide attempts in children and adolescents at risk, rapport 378 (2024)

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Table 1 Relapse prevention. Summary of characteristics of included randomized studies.

Reference Year Country Reference	Year Recruitment		Intervention, Therapy type Extent	Comparator	Follow up time	
Asarnow 2017 USA [1]	1 episode SH last 3 mo Lifetime SH ≥3 ED following SH	n=42 Mean age: 14.6 years 88% female 55% MD	SAFETY, family centred CBT, DBT, safety planning, crisis card 12 w	EUC psychoeducation, therapy session for parents, telephone counselling + TAU (not specified)	12 mo	
Bjureberg 2023 Sweden [2]	Meeting diagnostic criteria for NSSID (≥1 episode NSSI the last mo) No history of SA Self-referral or referred by health professionals	n=166 Mean age: 15 years 93% female	Internet-delivered emotion regulation therapy (IERITA) + TAU  Therapist-guided, 11 modules for the adolescent and 6 for the parents 12 w	Supportive therapy sessions every 2nd week + weekly self-rated assessments and as needed follow-ups by the research team	Up to 3 mo posttest	
Cotgrove 1995 UK [3]	NR ED following SH	n=105 Mean age: 14.9 years 85% female 6% with psychiatric disorder	Emergency green card  12 mo	TAU (not specified)	12 mo	
Cottrell 2018 USA [4-6]	≥2 SH prior to index episode and referral to CAMHS	n=832 Mean age: 14.3 years 89% female 89% history of multiple episodes of SH	SHIFT  Based on systemic family therapy  6–8 sessions; 6 mo	TAU consistent with NICE guidelines	Up to 18 mo	
Dobias 2021 USA [7]	Recent engagement in NSSI Advertisement, especially to reach LGBTQ+ groups	n=565 Mean age: 15 years 66% female 37.5% gender differs from sex	BI Based on CBT Single session web-based; 30 minutes	Active, attention-matched control program, supportive therapy, 30 min online	Posttest and 3 mo later	
Donaldson 2005 USA [8]	ED following SA	n=39 Mean age: 15 years 82% female 48% multiple lifetime SH	Individual SBT, problem solving and affect management skills Based on CBT	Supportive relationship therapy designed to analogue TAU	3 and 6 mo (after acute phase and posttest)	

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Duarte Velez 2022 USA [9]	Latinx/Hispanic Active SI during the past mo or a SA during the two last mo	n=46 and one caretaker Age: 15 years 80% female 89% mood disorders 70% AD	Acute phase (3 mo): 6 bimonthly sessions and 1 family session Booster: 3 monthly sessions, 2 family sessions, two crisis sessions SCBT-SB, home based for child and caretaker Based on CBT  1.5–3 h/week during 6–14 w	TAU, home based Eclectic individual therapy for the child and the caretaker	3, 6 and 12 mo post baseline
Esposito	Inpatient psychiatric hospital Hospitalized for SA or SI	30% ODD 26% CD n=147 Mean age: 15 years	Crisis module (9 sessions) and 2 coping skills modules  F-CBT, family-focused CBT	EUC outpatient care Enhanced = opportunities for	6, 12, 18 mo
Smythers 2019 USA [10]	Met criteria for mood disorders One SA prior to index admission OR NSSI OR SUD	76% female	(individual, family or parent sessions); 4 core skills sessions and menu of supplemental skills; average 27 adolescent sessions and 20 parent sessions.  12 mo (weekly first 6 mo, biweekly 6–9 mo and moly 9–12 mo)	contact	post randomization
Green 2011 UK [11]	≥2 lifetime SH episodes in 12 mo preceding trial entry CAMHS	n=366 Mean age: NR, range 12 to 17 years 89% female 62% MD, 33% "behavioral disorder"	Developmental psychotherapy, group based CBT, DBT, group psychotherapy Up to 32 sessions (mean 10.1) 6 w + weekly boosters as needed	TAU, according to clinical judgement. Group-based interventions were excluded	6 and 12 mo
Griffiths 2019 UK (Scotland) [12]	SH in 6 mo preceding trial entry Local CAMHS	n=53 Mean age: 15.6 years 79% female 33% BPD	MBT-A, 12 sessions, group based Mentalisation, emotion regulation, attachment therapy 12 w	TAU according to protocols and guidelines	36 w
Harrington 1998 UK [13, 14]	Engaged in an episode of self-poisoning Consecutive series visiting CAMHS	n=162 Mean age: 14.5 years 89% female 100% multiple episodes 67% MD	Family therapy, home based 5 sessions targeting communication and problem solving	TAU, not specified	6 mo 6 years

Hazell	≥2 episodes SH in the	n=72	Group based therapy + TAU	TAU	12 mo
2009	year preceding entry (1	Mean age: 14.4 years		Individual counselling, family	
Australia	last 3 mo)	90% female	CBT, social skills training, IPT,	sessions, medication assessment	
[15]	CAMHS	57% MD	group psychotherapy	etc	
		CD/ODD 7%	Six weekly sessions plus optional		
		SUD 4%	sessions as needed		
Kaess	≥5 episodes NSSI in six	n=74	Cutting Down Programme	CBT or psychodynamic therapies	4 and 10 mo
2020	mo; one during last mo	Mean age: 14.9 years	based on CBT and DBT		past baseline
Switzerland	Recruited by referral or	96% female	8–12 sessions, once weekly for 2–		
[16]	self-referral	69% depression and	4 mo		
		dysthymia			
		ODD 4%			
		SUD 1%			
Kennard	Hospitalized for SI with	n=66	BI, As Safe as Possible	Pharmacotherapy,	4, 13 and 24
2018	plan or intent, or SA	Mean age:15.1 year	1 session, 3 hours, delivered on	psychoeducation, referrals for	w post
USA		89% female	the inpatient unit, MI framework.	outpatient treatment,	baseline
[17]		86% MD	Smartphone app BRITE: Daily texts	development of safety plan	
		58% AD	with assessment and strategies		
			for emotion regulation and safety		
			planning		
McCauley	≥1 lifetime SA	n=173	DBT	Alternative psychotherapy	1 year
2018	≥3 lifetime SH (1 in the	Mean age: 15 years	Weekly individual psychotherapy,	Individual and group supportive	
USA	12 w preceding trial	94% female	multifamily group skills training,	therapy, parent sessions +	
[18]	entry)	84% MD	telephone coaching, weekly	weekly team consultation, crisis	
	≥3 criteria for BPD	54 % AD	therapist team consultation	card	
	High risk for suicide (SIQ-	53% BPD	6 mo		
	JR ≥24)				
Mehlum	≥2 episodes SH lifetime	n=77	DBT	EUC	16 w post test
2014, 2016,	(≥1 within 16 w	Mean age: 15.6 years	Weekly individual psychotherapy	Weekly sessions individual CBT	1 year, 3 years
2019	preceding trial entry	88% female	sessions	or psychodynamic therapy and	
Norway	≥2 criteria BPD diagnosis	60% MD	Multifamily group skills training	pharmocotherapy if needed	
[19-21]	OR ≥1 criterion for	43% AD	and telephone coaching as		
	diagnosis and ≥2	26% BPD	needed		
	subthreshold criteria	20% eating disorder	19 w		
		2.6% SUD			

Morthorst	≥5 episodes NSSI during	n=30	ERITA (see Bjureberg 2023)	Clinical assessment, treatment	12 w posttest
2022	the last year; ≥1 episode	Mean age: 15 years		for primary psychiatric condition.	
Denmark	the last mo	97% female		Pharmacological treatment,	
[22]		27% affective disorders		family-based treatment, CBT,	
	Recruitment via CAMHS	37% AD		DBT etc	
		23% personality disorders			
		17% lifetime SA			
Ougrin	Admitted to ED following	n=70	Manualised enhanced therapeutic	TAU following NICE guidelines	2 years
2011, 2013	SH	Mean age: 15.6 years	assessment		
UK		80% female	1 hour assessment and 30 min BI		
[23, 24]		58.6% multiple SH			
		60% mood disorder			
Rossouw	≥1 episode SH within the	n=80	MBT-A weekly individual and	TAU following NICE guidelines	3, 6, 9, 12 mo
2012	month preceding study	Mean age: 15 years	monthly family therapy sessions		
UK	entry	85% female	12 mo		
[25]	Community health	96% MD			
	services or EDs following	72% BPD			
	SH	71% SUD			
Santamarina	Repetitive SH in the year	n=35	DBT-A	EUC	16 w
Peres	before study entry and at	Mean age: 15.2 years	≥ one biweekly 1-hour individual	Individual CBT (1 hour) ≥	(posttest)
2020	current high risk for	89% female	session, one weekly group based	biweekly, psychoeducation plus	
Spain	suicide	83% MD	skills training for adolescents and	one weekly (?) session of group-	
[26]	At treatment CAMHS	54% AD	families separately, one weekly	based skills training (1 hour) for	
		14% BIP	consultation team meeting	adolescent and family separately	
			16 w		
Wood	≥2 episodes SH during	n=63	Developmental psychotherapy,	TAU	7 mo
2001	last year (one is the	Mean age: 14 years	group based	Variety of interventions, e.g.	
UK	index episode)	78% female	PST, CBT, DBT and psychodynamic	family sessions and nonspecific	
[27]	CAMHS	82.5% MD	group therapy	counselling	
			Six mo; ≥8 weekly sessions		

**BPD** = Borderline Personality Disorder; **CAMHS** = Child and Adolescent Mental Health Service; **ED** = Emergency Department; **ERITA** = Emotion Regulation Individual Therapy for Adolescents; **NSSI** = Non-Suicidal Self-Injury; **MD** = Mean Difference; **SA** = Suicide Attempts; **SH** = Self Harm; **SIQ** = Suicidal Ideation Questionnaire; **SIQ-JR** = Suicidal Ideation Questionnaire, Junior Version; **TAU** = Treatment as Usual

Table 2 Interventions targeted at risk groups for SH. Summary of characteristics for included randomized studies.

Reference Year Country Reference	Risk group Inclusion criteria Recruitment	Participants	Intervention Therapy type Extent	Comparator	Outcome and follow up time	
Esposito- Smythers 2011 USA [28]	bsito-Substance abuse n=40 thers 66.7% female 1 13–17 years Mean age: 15.7 years		Integrated CBT for families, to remediate maladaptive cognitions and behaviors found in both AOD and suicidality.  Three phases: Acute 6 mo + continuation 3 mo + maintenance 3 mo 24 sessions for adolescents and 12 sessions for parents considered as completers.	E-TAU, community treatment enhanced with a diagnostic evaluation report and medication management provided by the study psychiatrist	SI (SIQ-Sn) SA: K-SADS- PL Up to 18 months	
Goldbach [29]	LBTQ+ Students at high school	n=44 73% female 52% aged 15–16 years	Proud & Empowered Small group, 1 session weekly for 10 weeks, app 45 min each Mix of psychoeducation, didactic discussion and interactive activities (e.g. role plays) Led by a study team member and facilitated by selected school staff members	School as usual	Suicidality measured with 5 items from C-SSRS At end of intervention	
Goldston [30]	Substance abuse  13–19 years SA or suicide plan last 4 weeks (CSSR) or >30 on SIQ and past suicidal behavior or plan Alcohol or cannabis dependence disorder (DSM-/IV)	n=13 8 F and 5 M Mean age 16.5 years	Integrated therapy, RP-CBT + TAU Grounded in the relapse prevention model Sessions for adolescents and their parents 20 w, ≥1 session/w the first 12 weeks Two first sessions 75–90 min; thereafter 60 min Additional phone coaching	E-TAU, outpatient treatment in the community + monthly contacts with a case manager	SI (SIQ), suicidal behavior (C- SSRS), suicide 10 w, 20 w, 3 months	

	Depressive disorder (DSM-IV)  Referral from various				
	sites				
Kaminer 2006 USA [31]	Substance abuse  14-18 years Alcohol abuse or dependence disorder (DSM-IV)  SI och suicidal behavior last 30 days were excluded.  Consecutive recruitment at intake psychiatric care	n=144 33% F Mean age 15.9 years (SD 1.2)	CBT, for 9 weeks, addressed alcohol use.  After care for 3 months: relapse prevention sessions composed of CBT and MI.  Participants randomized to face-to face or telephone after care. Four sessions, 50 min (face to face) or 15 min (telephone) each.	CBT and No aftercare	SI (SIQ-JR)  After treatment and at end of intervention
Kirchner	LBTQ+	n=483	2 videos featuring a cisgender	2 videos with the same woman	SI (Reasons
2022		Cisgender male 26%	woman and man, 3 and 7 minutes	and man but dealing with a	for Living
Austria	14–22 years	Cisgender female 52%	respectively.	healthy lifestyle	Inventory-
[32]	Self-referral from web	Nonbinary/transgender: 21% Mean age: 19 years	Based on the Papageno effect		Adolescents, 32 items)
	sites targeting LBTQ+	iviean age. 19 years	theory (personal narratives of		32 items)
	youth	15% previous SA	hope).		After the
	7000	App 20% current mental			video and
		health treatment	On-line or at site		after 4 weeks
McManama O'Brien	Substance abuse	n=50 80% F	ASIST + TAU	TAU	SI (SIQ) SA (single
USA	14–17 years	Mean age: 15.8 years (SD	Based on motivational		item C-SSRS)
[33]	Psychiatrically	0.95)	enhancement and addressing		
	hospitalized following SA	62% marijuana use	alcohol and suicide in an		3 months
	or plan Endorsed alcohol use	70% ≥1 SA	integrated manner.		
	past month (ADQ)		60–90 min individual session + 20-		
	past month (100)		30 min family session.		

Pachankis	LBTQ+	n=120	LGBTQ+ affirmative ICBT face to	Assessment only, once weekly	SI (Suicidal
2023		Mean age: 20.4 years	face	for 10 weeks.	Ideation
USA	Age 16-25 years	Bisexual: 34%		Assessed minority stress and	Attributes
[34]	Identification as a sexual	Non-binary or transgender:	Transdiagnostic CBT adapted to	behavior	Scale, SIDAS)
	minority	45%	address sexual minority stress		
	Past 90 days symptoms		10 sessions during up to 16 weeks		4- and 8-
	of depression or anxiety				months post
	(≥2,5 on 2 item Brief				baseline
	Symptom Inventory-4)				
	Active suicidality				
	excluded				
	Recruited from social				
	media, mobile dating				
	apps, LGBTQ community				
	organizations				

CAP = Child and Adolescent Psychiatry; SA = Suicide Attempts; SIQ = Suicidal Ideation Questionnaire; TAU = Treatment as Usual

Table 3 Summary of characteristics for included studies using qualitative methodology.

Reference Year Country Reference	Inclusion criteria Recruitment	Participants	Researchers	Intervention	Data collection Analysis	Outcome
Ataie 2022 Iran [35]	14–18 years Meeting diagnostic criteria for NSSID; SA or severe SI last 4 months were excluded  After-trial mixed- methods intervention design  Convenience sampling	6 adolescent girls	3 researchers, experience in qualitative methods not described  Member checks by experienced therapist and the participants	Emotion regulation therapy	In-depth interviews  Directed qualitative content analysis	Experience regarding effects
Bailey 2020 [36]	Lead and last authors of studies on internet-based interventions to prevent suicide.  Invitation by e-mail to 30 respondents.	15 authors participated in the survey	9 researchers	Internet-based interventions	On-line survey with open- ended and forced-response questions.  Thematic analysis	Ethical issues with internet-based interventions to prevent suicide
Briggs 2017 UK [37]	Purposeful sampling from one CAMHS	10 mental health practitioners working with adolescent suicidal groups	Two university-based and one mental health nurse practitioner. Diverse views about the topic	Group therapies	Semi-structured interviews, 40–50 min Thematic analysis (latent and manifest)	Experiences
Lantto 2023 Sweden [38]	One CAP unit at a university hospital  All parents of adolescents with a BA contract were invited	26 parents were interviewed. 17 parents to adolescents who had used Brief	5 researchers with various backgrounds. Limited experience phenomenological research	Brief admission by self- referral	Semi-structured individual video-interviews (38 to 93 min, median 55 min)  Phenomenology	Lived experiences

		Admissions were selected				
Lindkvist 2022 Sweden [39]	One CAP unit at a university hospital  Adolescents 13–17 years, with at least 3/9 criteria of BPD, including recurrent self-harming and /or suicidal behavior, and at least 2 emergency consultations or emergency care at least once for 5–7	19 adolescents	6 researchers with various background,	Brief admission by self- referral	Semi-structured interviews by phone performed by (15– 69 min, median 24 min) Qualitative content analysis on a latent level	Experiences
	days during the last 6 months  Invitation to all (n=54) with a current or prior BA					
Ohlis 2023 Sweden [40]	≥40 visits at the DBT-A unit at one CAMHS between 2006 and 2025.  Invitation to all	75 young adults with SH and traits of BPD as adolescents	7 researchers with various background	DBT-A	Semi-structured interviews (23 to 75 min)  Purposive sampling with maximum variation; 19 interviews needed for saturation (18 F)  Reflexive thematic analysis	Retrospective (mean 6 years later), experiences of DBT-A
Popovich 2020 Canada [41]	Had received comprehensive training in standard DBT within last 15 years: n=42	31 clinicians	5 researchers with various background	DBT-A	Semi-structured interviews. 17 individual (20–50 min) and 5 group (app 1 hour) Inductive thematic analysis	Barriers and facilitators

Ratnaweera 2021 UK [42]	Purposeful sampling with snowballing at primary mental health organizations in a midsized city  Referred to CAMHS and DBT-A Between 13 and 17 years At least 2 episodes SH past 6 months 5/9 criteria for BPD	18 adolescents who consented to an exitinterview. 7 legal guardians	3 researchers with various background	DBT-A	Semi-structured interviews in-person or via Teams conducted by a psychologist working for the CAMHS.  Thematic analysis	Experience of DBT-A
Schiffler 2022 Austria [43]	Invitation to all  Age: 1–25 years Diagnosed BPD NSSI or suicidal behavior past 12 months  Former patients at the ward. Selected according to the diagnosis and invited. Additional snowball sampling and chain	26 young persons were included and interviewed before the trial.  13 of these (12 F, 1 M) aged 18 to 23 years were interviewed after the trial period.	6 researchers with various background	DBT-A with cell phone app	Two semi-structured, indepth interviews, before and after a 30-day trial period of the app.  Saturation was achieved after interviewing 13 persons twice.  Thematic qualitative text analysis (constant process of comparing and contrasting)	Experiences of the intervention
Simonsson 2021 Sweden [44]	Part of a pilot trial  13–17 years Fulfilling NSSI criteria Having engaged in ≥1 episode during the past month Severe SI excluded	16 eligible families.  Adolescent median age: 16 years  6 F and 3 non-binary	7 researchers with various background	IERITA	Individual semi-structured interviews (13–41 min).  9 pairs of adolescent/legal guardians were sufficient to reach saturation  Thematic analysis by two researchers	Experiences of IERITA

	Maximum variation sampling					
Smith 2023 UK [45]	One CAMHS  Parents to adolescents with SH and symptoms of BPD, attending the parent skills group of DBT-A	8 parents who completed the parent skills group and consented	6 researchers with various backgrounds	Parent skills group component of DBT-A run concurrently to the young people's skills group	Individual semi-structured interviews conducted by an external clinical nurse (45–60 min).  Inductive thematic analysis with reflexive process.	Experiences of the parent skills group

**BA** = Brief Admission by self-referral; **BPD** = Borderline Personality Disorder; **CAMHS** = Child and Adolescent Mental Health Service; **CAP** = Child and Adolescent Psychiatry; **DBT-A** = Dialectical Behavior Therapy adjusted for Adolescents; **ERITA** = Emotion Regulation Individual Therapy for Adolescents; **NSSI** = Nonsuicidal self-injury; **SH** = Self Harm; **SA** = Suicide Attempts

Table 4 Health economic studies.

Table 4 Health eco	
Author	Cottrell et al
Year	2018
Reference	[5]
Country	United Kingdom
Study design	RCT-based CEA. 18-month trial period and a decision-analytic model extrapolating
	the trail results to a 5-years' time horizon.
Population	Adolescents aged 11–17 years (n=782).
Setting	Child and Adolescent Mental Health Services (CAMHS)
Perspective	UK Health service
Intervention	Family therapy (FT) sessions were offered to the families, over a 6-month period, with approximately monthly intervals, but with more frequent initial appointments, which equated to approximately eight sessions. The sessions were about 1.25 hours' duration each. The family therapy was delivered by family therapists who forked in teams of three or four. (n=394)
vs	VS
control	Treatment as usual (TAU) (n=388)
Incremental cost	Primary analysis
	Incremental costs (95% CI): 1266 GBP (736 to 1796)
	Secondary analysis
	Incremental costs (95% CI): 1253 GBP (725 to 1780)
	Decision model analysis (5-year time horizon)
	Incremental costs (95% CI): 1262 GBP (1107 to 1418)
	Cost reported in GBP year 2014
In every entel	
Incremental	Primary analysis
effect	Incremental QALYs (95% CI): 0.034 (-0.004 to 0.065)
	Secondary analysis
	Incremental number of self-harm events (95% CI): 0.033 (–0.130 to 0.197)
	The contental number of sen number events (55% cl). 0.055 ( 0.150 to 0.157)

	Decision model analysis (5-year time horizon)
	Incremental QALYs (95% CI): 0.065 (0.053 to 0.075)
	The EQ-5D was used (ref) and converted to utility weights with Dolan et al [46].
ICER	Primary analysis: £36812 per QALY
	Secondary analysis: FT dominated
	Decision model analysis: £19 487 per QALY
Study quality and	Moderate quality
transferability*	Moderate transferability
Further information	The main trial results are reported in the same publication Cotrell et al [5].
Comments	The costs are different in the primary and secondary analysis because the
	sample size in the secondary analysis was different.

CEA = cost-effectiveness analysis; CI = Confidence interval; FT = Family therapy; GBP = Great British Pound;
HRQoL = Health-related quality of life; ICER = Incremental cost-effectiveness ratio; QALY = Quality adjusted life
years; RCT = Randomized Controlled Trial; TAU = Treatment as Usual

<sup>\*</sup>Assessed using SBU's checklist for trial-based health economic studies (Appedix 3).

Author	Haga et al
Year	2018
Reference	[47]
Country	Norway
Study design	RCT-based CEA
Population	Adolescents aged 12–18 years (n=77).
Setting	Child and adolescent psychiatric outpatient clinics
Perspective	Health care
Intervention	DBT-A, treatment according to the adolescent version of DBT. Consisted of weekly
	session of individual therapy (60 min) and weekly sessions of skills training in a
	multifamily format (120 min) for 19 weeks. After 19 weeks, if further treatment was
	needed, patients were referred to standard outpatient treatment (non-DBT). (n=39)
Vs	Vs
control	Enhanced usual care (EUC). EUC was a non-manualized treatment mainly consisted of

Comments	a analysis Cl. Confidence internal CCAS. Children's Clabel Assessment Scale DDT A
Further information	• The main trial results are reported in Mehlum et al [19].
transferability*	Moderate transferability
Study quality and	Moderate quality
	Total cost: –1904 EUR per one point improvement in CGAS score (global functioning)
	CGAS:
	Outpatient cost: –76 EUR per reduction of one self-harm episode
	Total cost: 346 EUR per reduction of one self-harm episode
ICER	Self-harm:
	Incremental number of self-harm episodes (95% CI): -22.5 (-40.6 to –4.3)
effect	
Incremental	Incremental CGAS score (95% CI): 4.1 (–2.3 to 10.6)
	Incremental outpatient costs (95% CI): 1713 (–4046 to 7457)
Incremental cost	Incremental total costs (95% CI): -7805 EUR (-21 622 to 6012)
	patients received standard outpatient treatment (n=38)
	a period of minimum 19 weeks. After 19 weeks, as for the intervention group,
	psychodynamical or cognitive behaviour-orientated therapy. Weekly treatment over

**CEA** = cost-effectiveness analysis; **CI** = Confidence interval; **CGAS** = Children's Global Assessment Scale; **DBT-A** = dialectical behaviour therapy for adolescents; **EUC** = Enhanced usual care; **EUR** = Euro; **ICER** = Incremental cost-effectiveness ratio; **RCT** = Randomized controlled trial

<sup>\*</sup>Assessed using SBU's checklist for trial-based health economic studies (Appendix 3)

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