Multimedia Appendix 1. Summary of efficacy studies of synchronous text-based psychological interventions.

Study	Population or sample	Design (eg, RCT[a])	Eligibility criteria (specific diagnosis)	Intervention and duration (eg, single session, 6 week program)	Control condition (eg, TAU[b])	Attrition	Main findings
S1. Blankers et al (2011), Netherlands [18]	N=205 adults with drinking problems Therapy alcohol online n=68, Age: mean=41.9; 49% male Internet-based self-help n=68, Age: mean=41.1, 49% male Waitlist n=69, Age mean=43.7, 51% male	RCT	18 years or older; AUDIT[c] score>8 to report drinking an average of more than 14 standard drinks a week	Synchronous Web-based therapy based on CBT[d] and motivation interviewing conducted in up to 7 text-based chat-therapy sessions (TAO[f]) Assessments at baseline, 3 and 6 months	Self-help Alcohol Online, a fully automated treatment intervention based on CBT and motivational interviewing (SAO[g]) Untreated waiting-list control group (WL[e])	TAO=36% at 3 months did not complete assessments, 40% at 6 months did not complete assessments SAO=30% at 3 months did not complete assessments; 43% at 6 months did not complete assessments WL= 26% at 3 months did not complete assessments, and 38% at 6 months did not complete assessments	Alcohol consumption: significant effects for TAO versus WL (*P*=.002) and for SAO versus WL (*P*=.03) on alcohol consumption at 3 months Differences between TAO and SAO were not significant at 3 months (*P*=.11) but were significant at 6 months (*P*=.03), with larger effects obtained for TAO QOLS[h] score: differences between TAO and WL were significant at 3 months (*P*=.11) with

							larger effects obtained for TAO Differences between TAO and SAO were not significant at 3 months (*P*=.37) but were at 6 months (*P*=.02) with larger effects obtained for TAO
S2. Cohen and Kerr (1999), United States [19]	N=24 Adolescents and adults (self-identified as wanting help for dealing with anxiety)	RCT	Help-seeking for anxiety	Single session Sessions conducted by psychology graduate students	TAU (face-to-face)		Anxiety: STAI[i] scores reduced significantly for both groups (chat and face-to-face) No significant differences between intervention groups
S3. Crutzen et al (2014), Netherlands [20]	N=12 Adolescents with psychosocial problems Web-based chat (n=5) Face-to-face (n=7)	RCT	SDQ[j] total score of 12 or higher on the SDQ	Three Web-based chat consultations with a YHC[k] worker (over a 3 month period)	Three face-to-face consultations with a YHC worker (over a 3 month period)	N=360 were invited to join the study; N=70 met secondary exclusion criteria n=165 declined to participate; n=74 not invited to participate; n=12 wrongly excluded;	Trial abandoned due to low recruitment rates

						n=10 no information; n=17 drop out before participation	
S4. Dowling and Rickwood (2015), Australia [21]	N=152 adolescents and adults who accessed a mental health website Age range: 16-25 years, Mean=17 (SD[l] 2.45); 12.2% male	Naturalistic study with pre or post measures	The age range of 16-25 years	Web-based support provided by fully qualified and supervised mental health clinicians, for example, psychologists, mental health nurses, occupational therapists, and social workers		N=506 completed baseline survey n=354 (70%, 354/506) did not complete a therapy session n=152 accessed Web-based chat website and responded to follow-up Of these, n=38 (25%, 38/152) did not progress to have a Web-based session; n=62 (40.8%, 62/152) had one session; n= 52 (34.2%, 52/152) had 2-5 sessions	No differences between participants at baseline Psychological distress: all participants improved significantly with moderate to large ES[m] for time (*P*<.001, partial eta[2]=.118) regardless of amount of counseling received Life satisfaction: a significant though small ES for time, with an increase in life satisfaction for all groups. (*P*=.009, partial eta[2]=.046). No differences were found according to the amount of

							Web-based counseling received Hope: no main effects but participants with 1 (*P*=.019, d=.25) or more (*P*=.008, d=.36) session increased significantly with a small to medium ES
S5. Fukkink and Hermanns (2009), Netherlands [22]	N=12,873 children who contacted helpline and answered 2 questions before intervention n=902 children and adolescents with first-post intervention questionnaire completed Age range 8-18 years Web-based chat: n=339 Age: mean=13.8; 11.5% male	Naturalistic comparison	Aged less than 18 years	Single session Web-based chat Problem-solving based counseling session	TAU (telephone conversation)	11,971 did not complete postintervention questions At 1 month, 24.7% (223/902) available for follow-up: n=119 Web-based chat; n=94 telephone	Well-being increased for participants in both groups following intervention (*P*<.001): Web-based chat (ES=0.62, medium) and telephone (ES=0.34, small) Perceived burden of problem decreased in both groups following intervention (*P*<.001): Web-based chat (ES=0.44,

	Telephone n=563 Age: mean=12; 21.3% male						medium) and telephone (ES=0.12, small) Follow-up analysis at 1 month, showed that changes in well-being and perceived burden of the problem were stable for both intervention conditions Intervention comparison showed that Web-based chat was slightly more effective in both improving children's sense of well-being and decreasing the perceived burden of the problem Overall, children were satisfied with the support they received from both chat and telephone interventions

S6. Fukkink and Hermanns (2009), Netherlands [23]	N=110 Children and adolescents who contacted the helpline Age range 9-17 years Web-based chat n=53; 16% male Telephone n=42; 23% male	Selection of conversations from database either phone or chat based	Aged less than 18 years	Single session Web-based chat Problem-solving based counseling session	TAU (telephone conversation)	n=15 excluded conversations due to poor quality, or abrupt end to session	From selected conversations, children's well-being increased for both Web-based chat (ES=0.45, medium) and telephone interventions (ES=0.40, medium) Perceived burden of the problem decreased for online chat (ES=0.36, small) and telephone (ES=0.20, small) There were no significant differences between chat and telephone interventions
S7. Kessler et al (2009), United Kingdom [24]	N=297 adults with depression Age range 18-75 years Intervention n=149	RCT	New episode of depression (diagnosed within preceding 4 weeks) and BDI score >14 No treatment for depression within	16 weeks duration CBT-based treatment with online therapist 5-10 sessions	WL	Online CBT : At 4 months' follow-up, 92 (62%, 92/149) had completed the therapy as intended	At 4 months: intervention BDI mean 14.5 (SD 11.2), (ES=0.81, large) Study recovery criteria: n=43,

	Age: mean=35.6; 30% males WL control n=148 Age mean=34.3; 33% males Web-based chat; BDI[n] mean=32.8, SD=8.3 Waitlist control; BDI mean=33.5, SD=9.3		the preceding 3 months No history of bipolar disorder, psychotic disorder, alcohol, or substance misuse	55 min per session		Data was collected for n=113 (76%, 113/149) of the intervention group At 8 months' follow-up, n=99 (66%, 99/149) had completed the therapy as intended Only 19 (13%, 19/149) received no sessions of therapy, nearly half n=70/149 had had at least eight sessions Data was collected for 109 (73%, 109/149) of the intervention group	(38%) reported a BDI of <10; WL BDI mean 22.0 (SD 13.5), and n=23 (24%) met BDI recovery criteria At 8 months: intervention BDI mean 14.7 (SD 11.6), (ES=0.70, large), Study recovery criteria met by: n=46 (42%) WL BDI mean 22.2 (SD 15.2); n=26 (26%) met BDI recovery criteria
S8. King et al (2006), Australia [25]	N=186 children seeking counseling Web-based chat n=86; Age: mean=15.4; 5% male	Naturalistic comparison		Single session; Counseling focused on information gathering and problem solving. Duration: 50-80 min.	TAU—telephone duration: 45-60 min		Distress: GHQ-12[o] significantly reduced in both conditions (partial eta squared=0.50, large) Session impact: Higher

	Telephone n=100 Age: mean=13.1; 33% male						SIS[p] for TAU (telephone) compared with Web-based chat (partial eta squared=0.15)
S9. Kordy et al (2016), Germany [26]	N=232 SUMMIT n=77 SUMMIT-PERSON n=79 TAU n=80	RCT	DSM-IV[q] criteria for MDD[r] with 3 or more major depressive episodes	Over 12 months, participants in both intervention arms received, in addition to TAU, the SUMMIT intervention which comprised intense monitoring via email or a mobile phone, including signaling of upcoming crises, assistance with personal crisis management, and facilitation of early intervention SUMMIT-PERSON additionally offered access to regular expert chats	TAU	n=8 (3.4%) participants discontinued participation: (TAU: n=5; SUMMIT: n=3) n=17 no interview data n=1 (TAU) was interviewed only once because his index treatment lasted 5.5 months Lost to follow-up: 6 months: n=20; 12 months: n=10; 18 months: n=12; 24 months: n=0	SUMMIT compared with TAU reduced the time with an unwell status (OR[s] 0.48; 95% CI 0.23-0.98) through faster transitions from unwell to well (OR 1.44; 95% CI 0.83-2.50) and slower transitions from well to unwell (OR 0.69; 95% CI 0.44-1.09) SUMMIT-PERSON was not superior to either SUMMIT (OR 0.77; 95% CI 0.38-1.56) or TAU (OR 0.62; 95% CI 0.31–1.24) The efficacy of

							SUMMIT was strongest 8 months after the intervention The accumulated gains are illustrated by the median proportions of well weeks: 52% in SUMMIT and 48% in SUMMIT-PERSON versus 31% in TAU alone

S10. Kramer et al (2014), Netherlands [27]	N=263 adolescents with depressive symptoms
	
	Intervention (n=131)
	
	WL (n=132)
		RCT	12-22 years of age; a CES-D[t] score of 22 or higher (the cut-off to detect possible cases of depression among adolescents)	Generally limited to 5 chat sessions of Solution-Focused Brief Therapy called PratenOnline	WL	N=592
						Excluded:
						n=329:
						CES-D<22;
						no consent signed n=265;
						baseline not completed n=39
						
						9 weeks: n=111 (42%);
						n=56 (praten);
						n=55 (WL)
						
						4.5months:
						n=131 (50%);
						n=58 (praten);
						n=76 (WL)
							PratenOnline showed significantly greater improvement in CES-D scores than the WL at both 9 weeks and 4.5 months with a small ES at 9 weeks (d=0.18, 95% CI −0.10 to 0.47) and a large ES at 4.5 months (d=0.79, 95% CI 0.45-1.08)

S11. Lelutiu-Weinberger et	N=41 males who have had	Naturalistic study	Male, aged between 18-29	Weekly sessions up to		N=146 eligibility	No significant change in

al (2015), United States [28]	sex with men Age range: 18-29 years MiCHAT: n=31 Age: mean 25 (SD 3.2) Non attendance: n=10		years, negative or unknown HIV[u] status, had used drugs >=5 occasions in the last 90 days, at least one incidence of condomless anal sex in last 90 days	8 1-h motivational interviewing and cognitive behavioral skills-based Web-based live chat sessions		screenings Eligible: n=41 Intervention: Attended >=1 session n=31 Completed follow-up n=22 No session attended n=10; Completed follow-up n=5	depression or anxiety symptom ratings: Brief Symptom Inventory Scale: Depressive symptoms Baseline mean 14.48 (SD 6.37) Follow-up: mean 13.37 (SD 6.00) (*P*=.19) D=0.10 Anxious symptoms Baseline mean 13.29 (SD 6.59) Follow-up: mean 13.1 (SD 6.83) (*P*=.88) D=0.03
S12. Murphy et al (2009), Canada [29]	N=127 adults who contacted an employee and family assistance program provider via phone Web-based chat n=26 Age: mean=42; 27% male	Naturalistic comparison		Therapy Online counselors gave online counseling Intervention unclear Counseling provided by Interlock Masters level counselors or	TAU (face-to-face) Interlock counselors as well	n=44 Web-based participants completed satisfaction survey, n= 26 completed pre or post GAF[v] ratings	GAF increased from pre to post intervention significantly in both conditions. Effect size not specified No group by time interaction

	Face-to-face n=101 Age: mean=44; 24% male			social workers			
S13. Schaub et al (2015), Germany [30]	N=308 adults with problematic cannabis use Self help + chat: n=114 Age: mean 28.4 (SD 9.6); 69.3% male Self help – chat: n=101 Age: mean 30.2 (SD 9.2); 76.2% male WL: n=93 Age: mean 29.8 (SD 10.0); 75.3% male	RCT	Age 18 years or older Cannabis use at least weekly in the last 30 days No history of serious psychiatric disorder Not pregnant Not currently undertaking other treatment for cannabis use disorder	6 weeks of self-help covering 8 modules based on principles of motivational interviewing and self-control practices with or without chat with trained counselor	WL	N=436 recruited Self help + chat: n=87 (76%, 87/114) did not complete chat component of intervention: No response: n=49; Other reason: n=3; No reason indicated by therapist: n=35 Follow-up: n=76 (66.6%, 76/114) no response Self help – chat: Follow-up: n=61 (60%) no response WL: Follow-up: n=55 (59%) no response	Compared with cannabis use from Swiss treatment monitoring statistics (act-info) in 2013, participants reported similar gender distribution though they tended to be older and reported higher cannabis use rates for the previous 7 days Groups did not differ on demographic and drug use measures with the exception of number of years of cannabis use At 3 month follow-up: mean cannabis use days/week

							differed between self-help − chat versus self-help + chat (beta= −0.75, SE^{w}=0.32, *t*=−2.39, *P*=.02, d=0.34, 95% CI 0.07-0.61), and between self-help + chat versus WL (beta=.70, SE=0.32, *t*=2.16, *P*=.03, d=0.20, 95% CI −0.07 to 0.47), but not between self-help - chat versus WL (beta=−0.05, SE=0.33, *t*=−0.16, *P*=.87, d=−0.14, 95% CI −0.43 to 0.14) No significant differences in the group comparisons in the mental health outcomes. Slight improvements in mental health (MHI-

							5[x]), Cannabis Use Disorder Identification Test, and severity of dependence scale in all 3 groups were reported (pre or post comparisons not reported)
S14. Wentz and Krevers (2012), Sweden [31]	N=12 adolescents and adults with ADHD[y] and/or an autism spectrum disorder Age range: 15-26 years mean: 20.1 years	Naturalistic study	Aged 15-26 years Diagnosis of ASD[z] and/or ADHD, autistic disorder, Asperger disorder Not currently diagnosed with substance abuse or dependence, depression or psychosis, low intelligence quotient	Maximum 14 session over 8-weeks Web-based support and coaching was offered at fixed times twice a week, 30 min to 1h per session		n=2 withdrew	Difference between baseline with 6-month follow-up showed significant increases on self-esteem (*P*=.02), sense of coherence (*P*=.04), and subjective global quality of life (*P*=.03)

[a]RTC: randomized controlled trial.

[b]TAU: treatment as usual.

[c]AUDIT: Alcohol Use Disorders Identification Test.

[d]CBT: cognitive behavioral therapy.

[e]WL: waitlist.

[f]TAO: Therapy Alcohol Online;

[g]SAO: Self-help Alcohol Online

[h]QOLS: Quality of Life Scale.

[i]STAI: State-Trait Anxiety Inventory.

[j]SDQ: The Strengths and Difficulties Questionnaire.

[k]YHC: youth health care.

[l]SD: standard deviation.

[m]ES: effect size.

[n]BDI: Beck Depression Inventory.

[o]GHQ-12: 12-item General Health Questionnaire.

[p]SIS: Session Impact Scale

[q]DSM-IV: Diagnostic and Statistical Manual of Mental Disorders, 4th edition.

[r]MDD: major depressive disorder.

[s]OR: odds ratio.

[t]CES-D: Center for Epidemiologic Studies Depression Scale

[u]HIV: human immunodeficiency virus.

[v]GAF: Global Assessment of Functioning.

[w]SE: standard error.

[x]MHI-5: 5-item Mental Health Inventory.

[y]ADHD: Attention-deficit/hyperactivity disorder.

[z]ASD: Autism spectrum disorder.

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