

## Multimedia Appendix File 6: Overview of experimental studies

Study	N (%female) Age M±SD	Intervention (duration)	Engagement strategy in intervention design by group	Effective engagement strategy (author conclusion based on the usability of study arms)	Engagement rates of different study arms
Lappalainen et al [15], 2013	24 (0%) 47 ± 7	3 group meetings + personal use of web portal, apps, and devices (3 months)	CG: No intervention	IG: Personalized feedback	NR
			IG: Personalized feedback		
Morris et al [17], 2015	166 (72%) 24±5	Peers to peer's platform for cognitive reappraisal and socio-affective support, supportive reappraisals from online crowd helpers (3 weeks)	CG: Expressive writing web-based	1. Personalized feedback 2. Support messages from peers 3. Flexibility in usage	CG: 75.2% completed follow-up
			IG: 1. Short content 2. Positive support messages from peers 3. Quick feedback anytime 4. Repeated reminders 5. Accessibility anytime		IG: 77.7% completed follow-up
Ly et al [23], 2017	28 (54%) 26±7	Learn strategies of positive psychology through fully automated conversation, daily check- ins, weekly summaries (2 weeks)	CG: No intervention	IG: Fully automated chatbot	IG: 13/14 completed intervention (defined as at least 14 reflections over the course of 14 days, as well as not inactive for 7 or more days in a row)
			IG: Fully automated chatbot (conversational agent)		
	259 (51%) 35±11	Customization of avatar, Attention Bias	IG1: Customized avatar/ABMT		NR

Birk and Mandryk [27], 2019		Modification Training (ABMT), negative mood induction (3 weeks)	IG2: Customized avatar/ no ABMT	IG1: Avatar customization and personalization	
			IG3: Generic avatar/ABMT		
			G4: Generic avatar/no ABMT		
Przybylko et al [29], 2019	426 (69%) 47±16	A video that presented evidence-based strategies for promoting mental health and emotional wellness, daily and weekly challenges, gamification, Social forum (12 weeks)	CG: No intervention	IG: Interactive components in the social forum	IG; Attrition Rate: 24%
			IG: 1. Real-time coping strategies for daily mission, 2. Social forum with interactive component 3. Rewards for completing missions. 4. Mission history available 5. Push notifications alert for incomplete mission 6. Clean graphic design reduces confusion.		
Renfrew et al [30], 2020	458 (78%) 46±1	Videos, workbook, reading materials relating to the topic, daily and weekly challenges (10 weeks)	CG: Automated email support	IG2: Videoconference session + SMS reminders	CG: Mv=6.05 (SD 4.0) CG: Mc=369 (SD 362) CG: AR= 21.9% (Mean (Mv) Number of videos watched out of 10. Mean (Mc) challenge adherence score out of 1000. Attrition Rate (AR) total number of randomized participants who did not complete either the preintervention (ie, early dropout) or the postintervention (ie, lost to follow-up) questionnaire.)

			IG1: Automated email support + reminder SMS		IG1: Mv=6.48 (SD 3.9) IG1: Mc=340 (SD 339) IG1: AR=19.3%
			IG2: Automated email support + videoconference session/ week + 1 reminder SMS for videoconference/ week		IG2: Mv=6.75 (SD 3.8) IG2: Mc=377 (SD 354) IG2: AR=31.6%

Note: N: Number, NR: not reported. M: mean, SD: standard deviation. IG: Intervention group, CG: Control group