

Appendix 1. Characteristics of the Included Studiesp

Study Fist author (year) country	Design	Sample N Age Sex (women)	Symptoms and severity	Diagnosis or not	Timeframe	Outcome measure	Experimental task and VR technology	Control group
Fehlmann (2023) ²⁷ Switzerland	RCT	I=43 26.7 (5.5) 67% C=46 28.2 (6.2) 63%	Public speaking anxiety (PSA)	No/local stuttering groups	2 months	SUDS, BFNE-R, SSQ,	Experimental task The participant's task was to perform three semi-improvised speeches in front of an evaluation committee consisting of virtual audience trained to maintain eye contact and a neutral facial expression and body posture. Scenarios: 3 × proximity scenario, 3 × classroom scenario, and 3 × lecture hall scenario VR equipment App for smartphones, noise canceling headphones, VR headset / 360° panoramic video clips	No inter- vention
Chard (2023) ²⁸ United Kingdom	RCT	I=13 32 (9.44) 15.4% C=13 39 (16.86) 33.3%	Social anxiety	Yes/DSM-5 diagnosis of SAD	2 weeks	FNE-B, UTBAS-6, WASSP, SUDS	Experimental task The participants' task was to speak to or remain silent in response to a virtual character presented in a social situation. Scenarios: Each treatment session consisted of three exposure exercises based on the same three social scenarios: ordering a drink at a café, telephone interaction, and public speaking VR equipment Smartphone placed into the cardboard headset / 360° YouTube video	Waitlist
Kim.MK (2022) ²⁹ South Korea	RCT	I=21 23.6 (2.8) 61.9% C=20 23.5 (2.2) 65.0%	Social anxiety	Yes/DSM-5 diagnosis of SAD	2 weeks	LSAS, HADS	Experimental task The participant's task was to perform speeches following the narration provided in the content. Scenarios: Since each situation included three topics (school life, business life, and daily life), there were three environments, 12 situations, and 36 topics. VR equipment Samsung Galaxy S6 latched onto Samsung Gear VR powered by Oculus / These environments were displayed via the head-mounted display (HMD)	Waitlist
Kim.H (2022) ³⁰ South Korea	RCT	I=24 23.75 (2.64) 41.7% C=28 23.18 (2.04) 35.7%	Social anxiety	Yes/DSM-5 diagnosis of SAD	2 weeks,	LSAS, BFNE, RSES, SIAS, HADS	Experimental task The participants underwent VR training autonomously, delivering a speech according to the narration of the VR content. Scenarios: 36 social topics (which could be grouped into 12 situations from three environments.), daily life, school life and, business life VR equipment The contents were displayed on a head-mounted display (HMD)	Waitlist

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Zainal (2021) ³² USA	RCT	I=26 C=18 Total 23.3 (9.32) 77.3%	Social anxiety)	No/High levels of self-reported PSA	Twice a week (4~10 sessions)	SPDQ, SIAS, MASI, PSWQ, PHQ-9	Experimental task The participants were guided by a virtual therapist to respond in a situation of their choosing. Participants were allowed to choose between the informal dinner party or the formal job interview themes for VRE. Scenarios: The dinner party exposure therapy theme comprised six scenes that encompassed four major social fear domains : assertiveness fear (e.g., vocalizing a contrarian perspective), intimacy fear (e.g., making small talk), observation anxiety (e.g., performing a task under observation by others), and performance anxiety (e.g., feeling the pressure to impress others). VR equipment The headset display / The VRE also contained cutting-edge 360° stereoscopic views	Waitlist
Reeves (2021) ³¹ United Kingdom	RCT	I (A)=17 27.40 (9.25) 94.0% I (E)=16 26.60 (6.79) 94% C=18 24.17 (6.53) 95.0%	Public speaking anxiety (PSA)	No/High levels of self-reported PSA	4 sessions and 10-week follow-up	PSAS, LSAS-SR, FNE-B	Experimental task The stimuli utilized in the 360° Audience / 360° Empty condition were designed to elicit anxiety through exposing participants to fearful stimuli. The participants' task was to deliver a speech in each of the virtual scenarios. Scenarios: 1 Small classroom 2 Large classroom 3 Medium conference room 4 Large conference room. VR equipment By Oculus and running on a Samsung Galaxy S7 Smartphone.	no inter- vention

SUDS=subjective units of distress scales; BFNE-R=brief fear of negative evaluation-revised; FNE-B=fear of negative evaluation scale; SSQ=simulator sickness questionnaire; UTBAS-6=the unhelpful thoughts and beliefs about stuttering scale; WASSP=the wright and ayre stuttering self-rating profile; LSAS-SR=the liebowitz social anxiety scale-self report.; HADS=hospital anxiety and depression scale; RSES=rosenberg self esteem scale; SIAS=social interaction anxiety scale; SPDQ= social phobia diagnostic questionnaire; MASI=measure of anxiety in selection interviews; PSWQ=penn state worry questionnaire; PHQ-9=patient health questionnaire; PSAS=public speaking anxiety scale.