

TABLE 1 - HEAD MOUNTED VR LITERATURE 2012-2017 (n=82)**Anxiety Disorders (n=42)**

<u>AUTHOR(S)</u>	<u>YEAR</u>	<u>COUNTRY</u>	<u>CONDITION</u>	<u>SAMPLE</u>	<u>INTERVENTIONS</u>	<u>VR USED (HMD alternatives and relevant technologies)</u>
Aymerich-Franch et al	2014	Spain	Anxiety	252	Representative avatars vs non representative avatars for public speaking	nVisor SX111
Bouchard et al	2016	Canada	Anxiety - SAD	59	VR CBT, CBT	eMagin z800
Depperman et al	2016	Germany	Fear of Spiders - Arachnophobia	83	Theta burst stimulation (iTBS) with VR	eMagin Z800
Dibbets et al	2015	The Netherlands	PTSD	39	VRET, Traditional Trauma Film Paradigm (TFP)	nVisor ST-50
Diemer et al	2013	Germany	Fear of spiders	58	single dose of quetiapine XR, placebo prior to a VR spider challenge	eMagin Z800
Diemer et al	2016	Germany	Fear of flying	80	VRET	eMagin Z800
Difede et al	2014	USA	PTSD (world Trade centre attack)	25	VRET with D-cycloserine, VRET with Placebo	Kaiser XL-50 VR
Freeman et al	2014	UK	PTSD (Physical assault victims)	106	VR assessment of PTSD and paranoia levels	Virtual Research VR1280
Freeman et al	2013	UK	PTSD (Physical assault victims)	106	6 month follow up of PTSD symptoms	Virtual Research VR1280
Glotzbach-	2013	Germany	Anxiety	49	VR office with	eMagin Z800

Schoon et al					electrical stimuli (CXT+), VR office without electrical stimuli (CXT-)	
Hartanto et al	2014	The Netherlands	Anxiety - SAD	16	VR scenarios (neutral, blind date, job interview)	eMagin Z800
Kampmann et al	2016	The Netherlands	Anxiety - SAD	60	VRET, iVET, Waiting List	nVisor SX60
Levy et al	2016	France	Fear of heights	6	VRET	Sony HMZ-T1
Levy et al	2016	France	Phobia falling	16	VR games	V8 HMD, EyeToy interface for PlayStation 2, Video projector
Malbos et al	2013	Australia	agoraphobia	19	VRET, VRET with CBT	Virtual Realities HMD Pro 3D-42
Meyerbroeker	2012	The Netherlands	Fear of flying	67	VRET with Yohimbine Hydrochloride (YHO), VRET with Placebo	Cybermind Visette Pro
Morina et al	2014	The Netherlands	Anxiety	43	VR with varying levels of presence	Nvisor SX 60
Morina et al	2015	The Netherlands	Anxiety	43	VRET	nVisor SX 60
Mosig et al	2014	Germany	Arachnophobia	43	VR differential fear conditioning paradigm, paired with either high frequency tone CS+ and low frequency tone CS-	eMagin z800
Muhlberger et al	2012	Germany	Fear of heights	56	Depth and belief cues manipulated in VR	eMagin z800
Norrholm	2016	USA	PTSD	50	VR PTSD	eMagin Z800,

					treatment with Administered D-cycloserine (DCS), alprazolam (ALP), or placebo (PBO)	
Notzon et al	2015	Germany	Arachnophobia	83	intermittent theta burst stimulation (iTBS) applied prior to VR experience.	eMagin Z800,
Pallavicini et al	2013	Italy	Anxiety	39	Text (TX), Audio (AU), Video (VD), VR	Vuzix VR Bundle, Xbox controller.
Peperkorn et al	2016	Germany	Fear of spiders	64	VR fear exposure	eMagin Z800,
Peperkorn et al	2014	Germany	Fear of spiders	96	VR perceptual cues	eMagin Z800,
Powers et al	2013	USA	Anxiety - SAD	26	VRET, In vivo	eMagin z800
Price et al	2015	USA	PTSD	116	VRET with <i>D-Cycloserine 50mg or alprazolam 0.25mg, compared to placebo</i>	eMagin Z800
Reger et al	2016	USA	PTSD	162	Prolonged exposure vs VRE	eMagin z800
Rinck et al	2015	The Netherlands	Fear of spiders	63	Immersive Virtual Environment (IVE)	Nvisor SX60,
Rothbaum et al	2014	USA	War veterans with PTSD	156	VRET + D-cycloserine, VRET + alprazolam, VRET + placebo	eMagin Z800
Rus-Calafell	2013	Spain	Fear of Flying	15	Imaginal exposure, VRET	HMD 5DT model

Safir et al	2012	Israel	Public Speaking Anxiety	88	VRET + CBT CBT Waiting list	VFX3D from Interactive Imaging Systems
Shiban et al	2016	Germany	Claustrophobia	96	VR fear reactions, specific cues (C), fear related information (I) and both.	eMagin Z800
Shiban et al	2016	Germany	Spider phobia	61	VRET	eMagin z800
Shiban et al	2015	Germany	Spider phobia	32	VRET, in vivo	eMagin Z800
Shiban et al	2015	Germany	Spider phobia	40	VR with both conditioned stimuli (CS) with aversive reinforcement in terms of air blast and scream (CS+) without aversive reinforcement (CS-)	eMagin Z800, Logitech Extreme 3D Pro Joystick
Shiban et al	2015	Germany	Spider phobia	58	VR single stimulus and single context, VR multiple stimuli and single context, VR single stimulus and multiple contexts, VR multiple stimuli and multiple scenario	eMagin Z800
Shiban et al	2015	Germany	Spider phobia	31	VRET: standard extinction, gradual extinction, Unconditioned stimuli,	eMagin Z800

					conditioned stimuli	
Urech et al	2015	Switzerland	Social Anxiety	15	Attention bias training with VR	nVisor SX60,
Webb et al	2015	USA	PTSD	58	VRE Physiological reactions measured to VR stimuli	eMagin Z800
Won et al	2016	USA	Social Anxiety	57	VRE to track head movements	nVisor sx60,

*SAD = Social anxiety disorder

*PTSD = Post traumatic stress disorder

*OCD = Obsessive compulsive disorder

Depression/Stress Studies (n=4)

Cikajlo	2017	Slovenia	Stress	8	Mindfulness	GearVR
Falconer et al	2016	UK	Depression	15	Virtual Bodies, adult and child	nVisor Sx111
Shah et al	2015	Singapore	Stress	22	VR DE-STRESS	ITG-PCX3 HMD,
Shiban et al	2016	Germany	Stress	45	In vivo, Tier social stress test (TSST), VRTSST, VRTSST with a virtual competitor	nVisor Sx60

Pain Management (n=22)

Amniabadi et al	2012	Iran	Pain and anxiety during dental treatment	120 (children)	Restorative treatment with and without vr eye glasses	i-glasses 920HR
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Bahart	2015		Chronic neck pain	32	Kinematic training vs VR kinematic training	Vuzix 1200VR
Bolte et al	2014	Germany	Chronic back pain, Kinesiophobia	17	Gain-based visual feedback modification	Sensics z8ight
Chen et al	2014	USA	Kinesiophobia	10	Target aiming task with altered visual feedback	Oculus Rift
Czub	2012	Poland	Analgesia	32	Heat stimulus while in a VE	E-Magin z800
Czub	2014	Poland	Analgesia	35	Memory influence during thermal pain stimulus	E-Magin z800
Czub	2014	Poland	Analgesia	30	Thermal Stimulus	E-Magin z800
Fabar	2013	The Netherlands	Pain Distraction for burns	36	VR distraction	Cybermind Hi-Res900 _{ST} - 3D
Garrett	2017	Canada	Chronic pain	10	VR therapy	Oculus Rift DK2

Harvie	2015	Australia	Neck Pain	24	Visual proprioceptive cues	Oculus Rift
Hoffman	2014	USA	Pediatric burns	1	Occupational therapy with and without VR	Oculus Rift
Hua	2015	China	Lower limb Chronic wound	65	VR distraction	E-Magin z800
Jeffer	2016	USA	Burn wound care	30	Standard care, passive distraction and VR	Kaiser Optics SR80a VR helmet with SXGA
Kipping	2012	Australia	Burn Wound Care	41	VR distraction	eMagin z800
Piskorz	2014	Poland	Cold Pressor	31	VR distraction tasks at different levels of complexity	Emagin z800
Sano	2015	Japan	Phantom Limb pain	6	Reaching task in VR	Oculus Rift
Sil	2014	USA	Cold pressor pain	62	VR distraction	5DT HMD

Spyridonis	2012	UK	Pain in wheel chair users	7	Paindroid pain management	Vuzix 920
Tanja-Dijkstra	2017	UK	Cold Pressor and Dental Pain	155 (85 and 75 over two studies)	VR coastal walk	Vuzix VR920
Tashkian	2017	USA	Pain in hospitalised patients	100	3D VR vs 2D distraction video	Samsung Gear VR
Wake	2015	Japan	Phantom Limb pain	5	Visual limb distraction	Vuzix 1200 VR
Walker et al	2014	USA	Cystoscopy	45	VR distraction	5DT

Addiction Studies (n=9)

Acker and Mackillop	2013	USA	Cigarette Addiction	47	VR-CET	eMagin z800
Bordnick et al	2012	USA	Nicotine Dependence	46	NRT (Nicotine replacement Therapy), VRST (Virtual reality skills training)	eMagin Z800.
Bouchard et al	2017	Canada	Gambling addiction	64	VRCBT and CBT	nVisor SX 60
Giovancarli et al	2016	France	Tabacco Consumption	120	VRET, CBT	Sensics ZSight HMD
Hadley et al	2014	USA	Adolescent Risk Reduction	42	VRE	eMagin z800
Lister et al	201	USA	Gambling	121	VR Casino	eMagin Z800

	6		Addiction		(Rigged)	
Pericot - Valverde et al	2015	Spain	Cigarette Addiction	41	VR-CET (Cue Exposure)	Vuzix iWear VR920
Pericot - Valverde et al	2014	Spain	Cigarette Addiction	48	VR-CET	Vuzix iWear VR920
Thompson-Lake et al	2015	USA	Cigarette Addiction	36	VR-CET	eMagin z800

Eating Disorders/Body image (n=5)

Gutierrez - Maldonado et al	2016	Spain	Eating Disorder	113	VRCE (Virtual Reality Craving Exposure)	Oculus Rift VR HMD DK1, Computer with 3D generated images viewed with polarised glasses
Keizer et al	2016	The Netherlands	Anorexia Nervosa.	59	VR Full Body Illusion	Oculus Rift DK2
Marco et al	2013	Spain	eating disorder (bulimia nervosa, eating disorder NOS)	34	VR CBT, controlled CBT	V6 by Virtual Research
Mountford et al	2015	UK	Body Image Disturbance (BID)	41	VR to elicit and detect BID	nVisor SX111,
Purvis et al	2015	USA	Body image disturbance (BID)	78	VR to elicit and detect BID	nVisor SX111 ,

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