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LIST OF REFERENCES

- Anderson, P. L., Price, M., Edwards, S. M., Obasaju, M. a, Schmertz, S. K., Zimand, E., & Calamaras, M. R. (2013). Virtual reality exposure therapy for social anxiety disorder: a randomized controlled trial. *Journal of Consulting and Clinical Psychology, 81*(5), 751–60. <http://doi.org/10.1037/a0033559>
- Baghaei, N., Chitale, V., Hlasnik, A., Stemmet, L., Liang, H. N., & Porter, R. (2021). Virtual Reality for Supporting the Treatment of Depression and Anxiety: Scoping Review. *JMIR mental health, 8*(9), e29681. <https://doi.org/10.2196/29681>
- Baños Rivera, R. M., Arbona, C. B., García-Palacios, A., Castellano, S. Q., & López, J. B. (2015). Treating emotional problems with virtual and augmented reality. In S. S.

Sundar (Ed.), *The Handbook of the Psychology of Communication Technology* (pp. 548–566). Chichester, UK: John Wiley & Sons.

Baragash, R. S., Aldowah, H., & Ghazal, S. (2022). Virtual and augmented reality applications to improve older adults' quality of life: A systematic mapping review and future directions. *Digital health*, 8, 20552076221132099.

<https://doi.org/10.1177/20552076221132099>

Bioulac S, Micoulaud-Franchi JA, Maire J, Bouvard MPO, Rizzo AA, et al. (2020). Virtual remediation versus methylphenidate to improve distractibility in children with ADHD: a controlled randomized clinical trial study. *J. Attent. Disord.* 24:326–35

Boeldt, D., McMahon, E., McFaul, M., and Greenleaf, W. (2020). “Using Virtual Reality Exposure Therapy (VRET) to Enhance Treatment of Anxiety Disorders: Identifying Areas of Clinical Adoption and Potential Obstacle”. In E. Aboujaoude, L. Gega, M. B. Parish, & D. M. Hilty (Eds.), *Digital Interventions in Mental Health: Current Status and Future Directions* (pp. 45-50). Lausanne: Frontiers Media SA.

Böhnlein J, Altegoer L, Muck NK, Roesmann K, Redlich R, et al. 2020. Factors influencing the success of exposure therapy for specific phobia: a systematic review. *Neurosci. Biobehav. Rev.* 108:796–820

Bordnick, P. S., Yoon, J. H., Kaganoff, E., & Carter, B. (2013). Virtual reality cue reactivity assessment: A comparison of treatment- vs. nontreatment-seeking smokers. *Research on Social Work Practice*, 23(4), 419–425. <http://doi.org/10.1177/1049731513482377>

- Botella, C., Fernández-Álvarez, J., Guillén, V., García-Palacios, A., & Baños, R. (2017). Recent progress in virtual reality exposure therapy for phobias: A systematic review. *Current Psychiatry Reports, 19*(7), 42. <https://doi.org/10.1007/s11920-017-0788-4>.
- Botella, C., Pérez-Ara, M. Á., Bretón-López, J., Quero, S., García-Palacios, A., & Baños, R. M. (2016). In vivo versus augmented reality exposure in the treatment of small animal phobia: A randomized controlled trial. *PLoS ONE, 11*(2). <https://doi.org/10.1371/journal.pone.0148237>.
- Botella, C., Serrano, B., Baños, R. M., & Garcia-Palacios, A. (2015). Virtual reality exposure-based therapy for the treatment of post-traumatic stress disorder: A review of its efficacy, the adequacy of the treatment protocol, and its acceptability. *Neuropsychiatric Disease and Treatment, 11*, 2533.
- Bouchard, S. (2011). Could virtual reality be effective in treating children with phobias? *Expert Review of Neurotherapeutics, 11*(2), 207–13.
- Buck B, Norr A, Katz A, Gahm GA, Reger GM. (2019). Reductions in reported persecutory ideation and psychotic-like experiences during exposure therapy for posttraumatic stress disorder. *Psychiatr. Res. 272*:190–95
- Butler RM, Heimberg RG. (2020). Exposure therapy for eating disorders: a review. *Clin. Psychol. Rev. 78*:101851. <https://doi.org/10.1016/j.cpr.2020.101851>
- Campos D, Bretón-López J, Botella C, Mira A, Castilla D, et al. (2019). Efficacy of an internet-based exposure treatment for flying phobia (NO-FEAR Airlines) with and

without therapist guidance: a randomized controlled trial. *BMC Psychiatry* 19:86.

<https://doi.org/10.1186/s12888-019-2060-4>

Cárdenas, G., Botella, C., Quero, S., Moreyra, L., De La Rosa, A., & Muñoz, S. (2009). A Cross-Cultural Validation of VR Treatment System for Flying Phobia in the Mexican Population. *Studies in Health Technology and Informatics*, 144, 141–4. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/19592751>

Cárdenas-López, G., de la Rosa-Gómez, A., Durán-Baca, X., & Bouchard, S. (2015). Virtual reality PTSD treatment program for civil victims of criminal violence. In *Virtual reality: Technologist, medical applications and challenges* (pp. 269–289). Nova Science Publishers.

Cárdenas-López, G., de la Rosa Gómez, A., Figueroa, R. D., & Baca, X. D. (2014). Virtual reality exposure for trauma and stress-related disorders for city violence crime victims. In *Proc. 10th Intl Conf. Disability, Virtual Reality & Associated Technologies* (pp. 63–71).

Cardos, R. A. I., David, O. A., & David, D. O. (2017). Virtual reality exposure therapy in flight anxiety: A quantitative meta-analysis. *Computers in Human Behavior*, 72, 371–380. <https://doi.org/10.1016/j.chb.2017.03.007>.

Carl E, Stein AT, Levihn-Coon A, Pogue JR, Rothbaum B, et al. (2019). Virtual reality exposure therapy for anxiety and related disorders: a meta-analysis of randomized controlled trials. *J. Anxiety Disord.* 61:27–36

- Diemer, J., Lohkamp, N., Mühlberger, A., & Zwanzger, P. (2016). Fear and physiological arousal during a virtual height challenge—effects in patients with acrophobia and healthy controls. *Journal of Anxiety Disorders, 37*, 30–39.
<https://doi.org/10.1016/j.janxdis.2015.10.007>.
- Donker T, Cornelisz I, van Klaveren C, van Straten A, Carlbring P, et al. (2019). Effectiveness of self-guided app-based virtual reality cognitive behavior therapy for acrophobia: a randomized clinical trial. *JAMA Psychiatry 76*:682–90
- Du Sert OP, Potvin S, Lipp O, Dellazizzo L, Laurelli M, et al. (2018). Virtual reality therapy for refractory auditory verbal hallucinations in schizophrenia: a pilot clinical trial. *Schizophr. Res. 197*:176–81
- Emmelkamp, P. M. G., & Meyerbröker, K. (2021). Virtual Reality Therapy in Mental Health. *Annual review of clinical psychology, 17*, 495–519.
<https://doi.org/10.1146/annurev-clinpsy-081219-115923>
- Etchemendy, E., Baños, R. M., & Botella, C. (2015). Virtual and augmented reality as useful and efficacious tools for the psychological treatment of emotional disorders. In P. C. S. Serino (Ed.), *Virtual reality: Technologist, medical applications and challenges* (pp. 31–54). Nova Science Publishers.
- Falconer, C. J., Rovira, A., King, J. A., Gilbert, P., Antley, A., Fearon, P., ... Brewin, C. R. (2016). Embodying self-compassion within virtual reality and its effects on patients with depression. *British Journal of Psychiatry Open, 2*(1), 74–80.
<http://doi.org/10.1192/bjpo.bp.115.002147>

- Farrell, L. J., Miyamoto, T., Donovan, C. L., Waters, A. M., Krisch, K. A., & Ollendick, T. H. (2020). Virtual reality one-session treatment of child-specific phobia of dogs: A controlled, multiple baseline case series. *Behavior Therapy, 52*(2), 478–491. <https://doi.org/10.1016/j.beth.2020.06.003>.
- Ferrer-Garcia M, Pla-Sanjuanelo J, Dakanalis A, Vilalta-Abella F, Riva G. (2019). A randomized trial of virtual reality–based cue exposure second-level therapy and cognitive behavior second-level therapy for bulimia nervosa and binge-eating disorder: outcome at six month followup. *Cyberpsychol. Behav. Soc. Netw. 22*:60– 68
- Fernandez-Alvarez J, Rozental A, Carlbring P, Colombo D, Riva G, et al. (2019). Deterioration rates in virtual reality therapy: an individual patient data level meta-analysis. *J. Anxiety Disord. 61*:3–17
- Fodor, L., Coteș, C., Cuijpers, P., Szamoskozi, S., David, D., & Cristea, I. (2018). The effectiveness of virtual reality based interventions for symptoms of anxiety and depression: A meta-analysis. *Sci Rep 8*, 10323. <https://doi.org/10.1038/s41598-018-28113-6>
- Freeman, D., Haselton, P., Freeman, J., Spanlang, B., Kishore, S., Albery, E., Denne, M., Brown, P., Slater, M., & Nickless, A. (2018). Automated psychological therapy using immersive virtual reality for treatment of fear of heights: a single-blind, parallel-group, randomised controlled trial. *The Lancet Psychiatry, 5*(8), 625–632. [https://doi.org/10.1016/S2215-0366\(18\)30226-30228](https://doi.org/10.1016/S2215-0366(18)30226-30228).

- Garcia-Batista EZ, Guerra-Pena K, Alsina-Jurnet I, Cano-Vindel A, Herrera Martinez SX, et al. (2020). Design of virtual environments for the treatment of agoraphobia: inclusion of culturally relevant elements for the population of the Dominican Republic. *Comput. Hum. Behav.* 102:97–102
- Ghita A. and Gutiérrez Maldonado J. (2018). Applications of virtual reality in individuals with alcohol misuse: a systematic review. *Addict. Behav.* 81:1–11
- Grenier, S., Forget, H., Bouchard, S., Isere, S., Belleville, S., Potvin, O., ... Talbot, M. (2015). Using virtual reality to improve the efficacy of cognitive-behavioral therapy (CBT) in the treatment of late-life anxiety: preliminary recommendations for future research. *International Psychogeriatrics / IPA*, 27(7), 1217–25.
<http://doi.org/10.1017/S1041610214002300>
- Guitard T, Bouchard S, Belanger C, Berthiaume M. (2019). Exposure to a standardized catastrophic scenario in virtual reality or a personalized scenario in imagination for generalized anxiety disorder. *J. Clin. Med.* 8(3):309.
<https://doi.org/10.3390/jcm8030309>
- Gutiérrez-Maldonado, J., Magallón-Neri, E., Rus-Calafell, M., & Peñaloza-Salazar, C. (2009). Virtual reality exposure therapy for school phobia. *Anuario de Psicología*, 40(2), 223-236.
- Gujjar KR, van Wijk A, Kumar R, de Jongh A.(2019a). Are technology-based interventions effective in reducing dental anxiety in children and adults? A systematic review. *J. Evid.-Based Dent. Pract.* 19(2):140–55

- Gujjar KR, van Wijk A, Kumar R, de Jongh A. (2019b). Efficacy of virtual reality exposure therapy for the treatment of dental phobia in adults: a randomized controlled trial. *J. Anxiety Disord.* 62:100–8
- Gutiérrez-Maldonado J. (2022). The Use of Virtual Reality Technology in the Treatment of Psychopathological Disorders. *Journal of clinical medicine*, 11(18), 5358.
<https://doi.org/10.3390/jcm11185358>
- Hong, Y.-J., Kim, H. E., Jung, Y. H., Kyeong, S., & Kim, J.-J. (2017). Usefulness of the mobile virtual reality self-training for overcoming a fear of heights. *Cyberpsychology, Behavior, and Social Networking*, 20(12), 753–761.
<https://doi.org/10.1089/cyber.2017.0085>.
- Inozu M, Celikcan U, Akin B, Mustafaoglu Cicek N. (2020). The use of virtual reality (VR) exposure for reducing contamination fear and disgust: Can VR be an effective alternative exposure technique to in vivo? *J. Obsessive Compuls. Relat. Disord.* 25:100518. <https://doi.org/10.1016/j.jocrd.2020.100518>
- Irvine, K., Irvine, A., Maalin, N., McCarty, K., Cornelissen, K., Tovée, M., & Cornelissen, P. (2020). Using immersive virtual reality to modify body image. *Body image*, 33, 232–243. <https://doi.org/10.1016/j.bodyim.2020.03.007>
- Jalal B, McNally RJ, Elias JA, Potluri S, Ramachandran VS. (2020). “Fake it till you make it”! Contaminating rubber hands (“multisensory stimulation therapy”) to treat obsessive compulsive disorder. *Front. Hum. Neurosci.* 13:414.
<https://doi.org/10.3389/fnhum.2019.00414>

-
- Jiang, M. Y. W., Upton, E., & Newby, J. M. (2020). A randomised wait-list controlled pilot trial of one-session virtual reality exposure therapy for blood-injection-injury phobias. *Journal of Affective Disorders*, *276*, 636–645.
<https://doi.org/10.1016/j.jad.2020.07.076>.
- Kampmann, I. L., Emmelkamp, P. M. G., Hartanto, D., Brinkman, W.-P., Zijlstra, B. J. H., & Morina, N. (2015). Exposure to Virtual Social Interactions in the Treatment of Social Anxiety Disorder: A Randomized Controlled Trial. *Behaviour Research and Therapy*, *77*, 147–56. <http://doi.org/10.1016/j.brat.2015.12.016>
- Karami B, Koushki R, Arabgol F, Rahmani M, Vahabie A. (2020). Effectiveness of virtual reality–based therapeutic interventions on individuals with autism spectrum disorder: a comprehensive meta-analysis. *PsyArXiv*. February 12.
<https://doi.org/10.31234/osf.io/s2jvy>
- Kim, K., Kim, C.-H., Kim, S.-Y., Roh, D., & Kim, S. I. (2009). Virtual reality for obsessive-compulsive disorder: past and the future. *Psychiatry Investigation*, *6*(3), 115–21.
<http://doi.org/10.4306/pi.2009.6.3.115>
- Kipping, B., Rodger, S., Miller, K., & Kimble, R. M. (2012). Virtual reality for acute pain reduction in adolescents undergoing burn wound care: a prospective randomized controlled trial. *Burns : Journal of the International Society for Burn Injuries*, *38*(5), 650–7. <http://doi.org/10.1016/j.burns.2011.11.010>

- Lahiri, U., Bekele, E., Dohrmann, E., Warren, Z., Sarkar, N. (2015). A physiologically informed virtual reality based social communication system for individuals with autism. *Journal of Autism and Developmental Disorders*, *46*, 133-40.
- Lahti S., Suominen A., Freeman R., L.hteenoja T., and Humphris G. (2020). Virtual reality relaxation to decrease dental anxiety: immediate effect randomized clinical trial. *JDR Clin. Transl. Res.* *5*:312–18. <https://doi.org/10.1177/2380084420901679>
- Lindner P., Miloff A., Zetterlund E., Reuterskiöld L., Andersson G., and Carlbring P. (2019). Attitudes Toward and Familiarity With Virtual Reality Therapy Among Practicing Cognitive Behavior Therapists: A Cross-Sectional Survey Study in the Era of Consumer VR Platforms. *Front. Psychol.* *10*:176. doi: 10.3389/fpsyg.2019.00176
- Malbos, E. (2015). Virtual reality in exposure therapy: The next frontier. In E. A. V. Starcevic (Ed.), *Mental health in the digital age: Grave dangers, great promise* (pp. 220–237). Oxford University Press.
- Malbos, E., Rapee, R. M., & Kavakli, M. (2013). A controlled study of agoraphobia and the independent effect of virtual reality exposure therapy. *The Australian and New Zealand Journal of Psychiatry*, *47*(2), 160–168.
- Maples-Keller, J., Yasinski, C., Nanjin, N, & Rothbaum, B. (2017). Virtual reality-enhanced extinction of phobias and post-traumatic stress. *Neurotherapeutics*, *14*(3), 554-63.
- Maskey, M., Lowry, J., Rodgers, J., McConachie, H., & Parr, J. R. (2014). Reducing specific phobia/fear in young people with autism spectrum disorders (ASDs) through a virtual reality environment intervention. *PloS One*, *9*(7), e100374.

- McMahon, E. "Treating Anxiety Disorders with Virtual Reality". In Stone, J., ed. *MHVR: The Power of Immersive Worlds*, ChessPlay, LLC, manuscript in preparation.
- McMahon, E. (2019). *Overcoming Anxiety and Panic interactive guide*. Hands-on-Guide.
- McMahon, E. (2022). Using Virtual Reality to Treat Anxiety. In Wilson, H. (Ed.), *Digital Delivery of Mental Health Therapies: A Guide to the Benefits, Challenges and Making it Work*, (pp. 256-273), Jessica Kingsley Publishers.
- McMahon, E. with Boeldt, D. (2021). *Virtual Reality Therapy for Anxiety: A Guide for Therapists*. Routledge.
- Mishkind, M., Norr, A., Katz, A., et al. (2017). Review of virtual reality treatment in psychiatry: Evidence versus current diffusion and use. *Current Psychiatry Reports*, 19(11), 11-19.
- Monaghesh, E., Samad-Soltani, T., & Farhand, S. (2022). Virtual reality-based interventions for patients with paranoia: A systematic review, *Psychiatry Research*, 307, 114338. <https://doi.org/10.1016/j.psychres.2021.114338>
- Morina, N., Ijntema, H., Meyerbröker, K., & Emmelkamp, P. M. G. (2015). Can virtual reality exposure therapy gains be generalized to real-life? A meta-analysis of studies applying behavioral assessments. *Behaviour Research and Therapy*, 74(November), 18–24. <https://doi.org/10.1016/j.brat.2015.08.010>.
- Navarro-Haro MV, Modrego-Alarcón M, Hoffman HG, López-Montoyo A, Navarro-Gil M, et al. (2019). Evaluation of a mindfulness-based intervention with and without virtual

reality dialectical behavior therapy and mindfulness skills training for the treatment of generalized anxiety disorder in primary care: a pilot study. *Front. Psychol.* 10:55.

<https://doi.org/10.3389/fpsyg.2019.00055>

Ngai, I., Tully, E. C., & Anderson, P. L. (2015). The course of the working alliance during virtual reality and exposure group therapy for social anxiety disorder. *Behavioural and cognitive psychotherapy*, 43(2), 167–181.

<https://doi.org/10.1017/S135246581300088X>

Öst, L.-G., Enebrink, P., Finnes, A., Ghaderi, A., Havnen, A., Kvale, G., Salomonsson, S., & Wergeland, G. J. (2023). Cognitive behavior therapy for adult anxiety disorders in routine clinical care: A systematic review and meta-analysis. *Clinical Psychology: Science and Practice*. Advance online publication. <https://doi.org/10.1037/cps0000144>

Page, S., & Coxon, M. (2016). Virtual Reality Exposure Therapy for Anxiety Disorders: Small Samples and No Controls? *Frontiers in Psychology*, 7, 326.

<http://doi.org/10.3389/fpsyg.2016.00326>

Park, C.-B., Park, S. M., Gwak, A. R., Sohn, B. K., Lee, J.-Y., Jung, H. Y., ... Choi, J.-S. (2015). The effect of repeated exposure to virtual gambling cues on the urge to gamble. *Addictive Behaviors*, 41, 61–4. <http://doi.org/10.1016/j.addbeh.2014.09.027>

Parsons, T. D. & Rizzo, A. A. (2008). Affective outcomes of virtual reality exposure therapy for anxiety and specific phobias: A meta-analysis. *Journal of Behavior Therapy and Experimental Psychiatry*, 39(3), 250–261. <https://doi.org/10.1016/j.jbtep.2007.07.007>.

- Pericot-Valverde I, Secades-Villa R, Gutierrez-Maldonado J. (2019). A randomized clinical trial of cue exposure treatment through virtual reality for smoking cessation. *J. Subst. Abuse Treat.* 96:26–32
- Riboni F., Comazzi B, Bercovitz K, Castelnuovo G, Molinari E, et al. (2020). Technologically-enhanced psychological interventions for older adults: a scoping review. 191. <https://doi.org/10.1186/s12877-020-01594-9>
- Rus-Calafell M, Garety P, Sason E, Craig TJK, Valmaggia LR. (2018). Virtual reality in the assessment and treatment of psychosis: a systematic review of its utility, acceptability and effectiveness. *Behav. Med.* 48:362–91
- Rus-Calafell, M., Garety, P., Ward, T., Williams, G., Huckvale, M., Leff, J., & Craig, T. K. (2015). Confronting Auditory Hallucinations Using Virtual Reality: The Avatar Therapy. *Studies in health technology and informatics*, 219, 192–196.
- Rutkowski, S., Kiper, P., Cacciante, L., Cieślik, B., Mazurek, J., Turolla, A., & Szczepańska-Gieracha, J. (2020). Use of virtual reality-based training in different fields of rehabilitation: A systematic review and meta-analysis. *Journal of rehabilitation medicine*, 52(11), jrm00121. <https://doi.org/10.2340/16501977-2755>
- Salehi, E., Mehrabi, M., Fatehi, F., & Salehi, A. (2020). Virtual Reality Therapy for Social Phobia: A Scoping Review. *Studies in health technology and informatics*, 270, 713–717. <https://doi.org/10.3233/SHTI200253>

-
- Segawa T, Baudry T, Bourla A, Blanc JV, Peretti CS, et al. (2020). Virtual reality (VR) in assessment and treatment of addictive disorders: a systematic review. *Front. Neurosci.* 13:1409. <https://doi.org/10.3389/fnins.2019.01409>
- Shiban, Y., Peperkorn, H., Alpers, G. W., Pauli, P., & Mühlberger, A. (2016). Influence of perceptual cues and conceptual information on the activation and reduction of claustrophobic fear. *Journal of Behavior Therapy and Experimental Psychiatry*, 51, 19–26. <https://doi.org/10.1016/j.jbtep.2015.11.002>.
- Smith, M. J., Fleming, M. F., Wright, M. A., Losh, M., Humm, L. B., Olsen, D., & Bell, M. D. (2015). Brief report: vocational outcomes for young adults with autism spectrum disorders at six months after virtual reality job interview training. *Journal of Autism and Developmental Disorders*, 45(10), 3364–9. <http://doi.org/10.1007/s10803-015-2470-1>
- Smith, M. J., Fleming, M. F., Wright, M. A., Roberts, A. G., Humm, L. B., Olsen, D., & Bell, M. D. (2015). Virtual reality job interview training and 6-month employment outcomes for individuals with schizophrenia seeking employment. *Schizophrenia Research*, 166(1-3), 86–91. <http://doi.org/10.1016/j.schres.2015.05.022>
- Vailati Riboni, F., Comazzi, B., Bercovitz, K., Castelnuovo, G., Molinari, E., & Pagnini, F. (2020). Technologically-enhanced psychological interventions for older adults: a scoping review. *BMC Geriatr* 20, 191. <https://doi.org/10.1186/s12877-020-01594-9>
- Wechsler TF, Kümpers F, and Mühlberger A. (2019). Inferiority or Even Superiority of Virtual Reality Exposure Therapy in Phobias?—A Systematic Review and

Quantitative Meta-Analysis on Randomized Controlled Trials Specifically Comparing the Efficacy of Virtual Reality Exposure to Gold Standard in vivo Exposure in Agoraphobia, Specific Phobia, and Social Phobia. *Front. Psychol.* 10:1758.

<https://doi:10.3389/fpsyg.2019.01758>

Wenrui D, Die H, Sheng X, Xiaoyu L, Jingwen Z, et al. (2019). The efficacy of virtual reality exposure therapy for PTSD symptoms: a systematic review and meta-analysis. *J. Affect. Disord.* 257:698–709

Wiederhold, B. K., Bouchard, S., & Loranger, C. (2014). Fear of flying (aviophobia): Efficacy and methodological lessons learned from outcome trials. In *Advances in Virtual Reality and Anxiety Disorders* (65–89). Springer US. https://doi.org/10.1007/978-1-4899-8023-6_4.