INPLASY

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Effectiveness of a virtual reality-based therapeutic intervention on social and communication skills in children with autism: a systematic evaluation and meta-analysis

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Preliminary searches.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 19 February 2024 and was last updated on 19 February 2024.

INTRODUCTION

*R*eview question / Objective Systematic reviews and meta-analyses were used to verify the effectiveness of virtual reality in the treatment of social and communication skills in children with autism spectrum disorder.

Condition being studied Autism usually begins in early childhood and is a lifelong neurological disorder. The core symptom is a decline in executive and social functioning. At present, the cause of autism is still unclear and cannot be completely cured, so how to effectively improve and improve social and communication skills has become the focus of ASD research.

METHODS

Participant or population The subjects included in this study must be children with ASD diagnosed by authoritative institutions, aged from 3-12years old, with the same characteristics before and after the experiment, with no restrictions on nationality, gender, and race.

Intervention Virtual reality was used as an intervention.

Comparator The control group received routine rehabilitation treatment.

Study designs to be included Randomized controlled trial (RCT) or controlled trial.

Eligibility criteria P: Diagnostic criteria for patients from special education schools or DSMIV. I: The experimental group carried out virtual reality technology intervention, and there were no specific requirements for the intervention. C: The control group received only conventional treatment. O:

Social and communication skills: Randomized controlled trials (RCTs) or controlled trials.

Information sources Cochrane Library, PubMed, EBSCO, Science Direct, CNKI, ScienceNet.

Main outcome(s) CE (late or early motion), AE (motion accuracy) and VE (motion accuracy) Identify primary or basic emotions (PE), identify secondary emotions (SE), emotions and situations of primary emotions (ESPE), emotions and situations of secondary emotions (ESSE) PeP-3 Emotional expression,PeP-3 social reciprocity Cognitive Language, Gross motor Mimicry, Social interaction, Emotional expression.

Quality assessment / Risk of bias analysis Cochrane 5.1 Handbook.

Strategy of data synthesis Data analysis using Review Manager 5.4 software. The square of I statistic was used to test for heterogeneity among studies, and when the square of I ≤ 50%, it indicated no heterogeneity among similar studies, and meta-analysis was performed using a fixed effects model; when the square of I > 50%, it indicated the existence of heterogeneity among studies.

Subgroup analysis Age of participants (3≤6≤12 years); Time of one intervention: (30≤45≤60 minutes).

Sensitivity analysis The heterogeneity sources of the articles were explored, and the sensitivity analysis of the included studies was conducted. Stata software was used to remove the included studies one by one, and the effect size of the remaining studies was pooled to check the impact of the results.

Country(ies) involved China.

Keywords virtual reality interventions; children with autism; social skills; Meta-analysis.

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