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#### Neurofeedback Within the Scope of Occupational Therapy With Clients with Substance Use Disorder: A Scoping Review

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# Neurofeedback Within the Scope of Occupational Therapy With Clients with Substance Use Disorder: A Scoping Review

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### **BACKGROUND**

- Substance use disorder (SUD) is the inability to control frequent alcohol and/or drug use that significantly impairs many facets of life (social, mental, occupational, and physical) (SAMHSA,2022).
- Neurofeedback (NFB) is a non-invasive biofeedback technique that employs auditory or visual feedback to reinforce healthy brainwave activity (Marzbani, 2016).
- However, there is no systematic understanding of how neurofeedback therapy can be used with clients with SUD within the scope of the occupational therapy (OT) practice.

## PROBLEM

The use of neurofeedback therapy in clients with SUDs has not been systematically reviewed to identify its use within the scope of OT practice, leaving it difficult for OT practitioners to integrate neurofeedback into OT for clients with substance use disorders.

## **PURPOSE**

To conduct a scoping review of the literature to identify how is neurofeedback therapy utilized with clients with substance use disorders that is within the scope of OT practice?

### **METHODS**

5 Step Scoping review methodology (Arksey & O' Malley, 2005)

#### 1. Identify the research

How is neurofeedback therapy utilized with clients with substance use disorders that is within the scope of occupational therapy practice?

#### 2. Identify relevant studies

- Substance abuse OR substance use OR drug abuse OR drug addiction OR drug use AND Neurofeedback
- CINAHLComplete, APA PsycInfo, MEDLINE, APA PsycArticles, OpenDissertations

### 3. Study Selection

#### **Inclusion Criteria**

- Must address substance use population
- Must address neurofeedback as an intervention treatment
- Published between 2012 and 2023

#### **Exclusion Criteria**

- Does not meet inclusion criteria
- Not published in English language
- 115 articles screened; 15 included

#### 4. Chart the data: Summary Tables

- NFB and Substance use addressed
- Domain of OT with sub-themes and codes of assessment outcomes
- NFB type addressing decrease desire to use substance

5. Collect, summarize, and report results

### RESULTS

#### **Assessment Outcomes:**

The Domain of Occupational Therapy included 15 of 15 articles addressing different sub themes depending on the area of discussion of topic.

Occupations 47.7%

- Symptom management (62.5%) -Decreased (1) Desire to use drugs (2) Depression (3) OCD (4) anxiety (5) Withdrawal
- Rest & Sleep (12.5%) Sleep Disorders/Quality
- Social & Emotional Health (12.5%)- Quality with relationship with oneself
- **Relationships** (12.5%) Quality of relationship with others

Performance **Patterns** 3.1%

Roles (100%) – Employee, Spouse, Father, Son

**Client Factors** 49.2%

### References



- **Higher level Cognition** (12.5%)- Executive functioning
- **Attention** (12.5%)- Attention
- **Thought** (25.0%)- Lack of control over drug, self perceived happiness
- **Emotional** (12.5%)- Emotion & mood processing
- Mental functions of sequencing complex movement (37.5%)- Speed, reaction time, restlessness
- **Energy** (25.0%) Craving, impulsivity
- Sleep (12.5%)- sleep quality
- **Memory** (12.5%)- Working memory

### DISCUSSION & IMPLICATIONS

Neurofeedback literature utilizes distinct code words: self-regulation, quality of life, desire to use, and withdrawal symptoms, which are aspects that are addressed within the scope of OT practice.

- Decreased desire to use a substance is the most frequently addressed code and is associated with symptom management in the OTPF.
- NFB is fairly new to the SUD population. No significant reasons were found for using a specific type of neurofeedback for an SUD.
- Overall results for neurofeedback demonstrate its effectiveness among individuals with SUD
- MOHO constructs were seldom addressed in the literature.
- The overall literature acknowledges that NFB addresses multiple aspects of the Occupational Therapy Practice Framework (OTPF) and is significantly within the scope of OT.
- Educating OT practitioners on NFB and it's fit with our practice could potentially influence the use of neurofeedback within OT practice settings enhancing outcomes to improve the quality of life for people recovering from SUD.

This project does not involve human subjects and does not require IRB approval.