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Original Research Paper

Occupational Therapy

EFFECT OF AN OCCUPATIONAL THERAPY PROGRAM BASED ON "BALANCING EVERYDAY LIFESTYLE" (BEL) APPROACH VERSUS CONVENTIONAL OCCUPATIONAL THERAPY FOR IMPROVING PSYCHOLOGICAL FUNCTIONING OF PATIENTS WITH SCHIZOPHRENIA

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ABSTRACT Schizophrenia is a chronic and disabling mental illness that significantly impairs psychological and social functioning. Occupational therapy plays a vital role in improving daily functioning and quality of life in affected individuals. This experimental study aimed to compare the effectiveness of an occupational therapy program based on the Balancing Everyday Lifestyle (BEL) approach with conventional occupational therapy in improving psychological functioning of patients with schizophrenia. Thirty participants were randomly assigned into control and experimental groups. Outcome measures included Global Assessment of Functioning (GAF) and Positive and Negative Syndrome Scale (PANSS). Results showed significant improvement in the experimental group, indicating the effectiveness of the BEL approach.

KEYWORDS : Schizophrenia, Occupational Therapy, Balancing Everyday Lifestyle (BEL), Psychological Functioning, PANSS, GAF, Mental Health Rehabilitation

INTRODUCTION

Schizophrenia is one of the most severe and disabling mental disorders, characterized by disturbances in thinking, perception, emotions, behavior, and social functioning. It is a chronic psychiatric illness that affects individuals across cultures, socioeconomic backgrounds, and geographical regions. The disorder significantly interferes with a person's ability to perform daily activities, maintain interpersonal relationships, and engage meaningfully in work, education, and social participation. Due to its early onset and persistent nature, schizophrenia causes a substantial burden not only on the affected individual but also on families, caregivers, and the healthcare system as a whole. According to the World Health Organization (WHO), schizophrenia affects approximately 24 million people worldwide and is one of the top causes of years lived with disability among mental disorders. The lifetime prevalence of schizophrenia is estimated to be around 1% globally. In India, epidemiological studies have reported prevalence rates ranging from 0.7 to 3.8 per 1,000 population, with variations depending on region, methodology, and diagnostic criteria. The National Mental Health Survey of India (2015–16) also revealed that schizophrenia and other psychotic disorders contribute significantly to the national burden of mental illness. The illness typically begins in late adolescence or early adulthood and follows a long-term course with periods of relapse and remission. Schizophrenia is clinically characterized by a combination of positive symptoms, negative symptoms, and cognitive deficits. Positive symptoms include hallucinations, delusions, disorganized thinking, and abnormal motor behavior. Negative symptoms comprise blunted affect, social withdrawal, lack of motivation (avolition), reduced speech (alogia), and anhedonia. Cognitive impairments involve deficits in attention, memory, executive functioning, and processing speed. These symptoms interact with each other and result in profound functional disability, often more disabling than the psychotic symptoms themselves.

The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) defines schizophrenia based on the presence of at least two core symptoms (delusions, hallucinations, disorganized speech, disorganized behavior, and negative symptoms) for a minimum duration of one month, with continuous signs of disturbance persisting for at least six months. A significant decline in occupational, academic, or social functioning must also be evident. The disorder presents as a heterogeneous syndrome, meaning that symptom presentation, severity, and functional impact vary widely among individuals. Burden of Schizophrenia on Psychological and Functional Domains. Schizophrenia profoundly affects psychological functioning, including emotional regulation, insight, motivation, self-concept, and social cognition. Individuals with schizophrenia often experience difficulties in maintaining self-care, managing daily routines, initiating productive activities, sustaining attention, and engaging in purposeful occupations. Occupational dysfunction is one of the most persistent and disabling consequences of schizophrenia. Even after adequate pharmacological stabilization, many individuals continue to experience residual symptoms and impaired functioning, especially in areas of independent living, social participation, and vocational performance. Functional impairment in schizophrenia is not only a consequence of psychotic symptoms but is also strongly influenced by negative symptoms and cognitive deficits. These impairments interfere with the ability to structure daily life, engage in meaningful activities, and maintain occupational balance. The resulting inactivity, social isolation, and lack of role fulfillment further worsen psychological well-being, leading to a vicious cycle of disability and dependence.

In addition to the direct impact on the individual, schizophrenia imposes a heavy emotional, financial, and social burden on families and caregivers. Stigma associated with the illness often leads to discrimination, social exclusion, delayed treatment seeking, and poor rehabilitation outcomes. In low- and middle-income countries like India, limited access to comprehensive psychosocial rehabilitation further aggravates long-term disability.

Role of Occupational Therapy in Schizophrenia: Occupational therapy (OT) is a core mental health profession that focuses on enabling individuals to participate meaningfully in daily life through engagement in purposeful activities or "occupations." In schizophrenia, occupational therapy plays a crucial role in promoting functional recovery by addressing deficits in self-care, productivity, leisure, social participation, and daily routines. The ultimate goal of occupational therapy in mental health is not merely symptom reduction but the restoration of meaningful roles, identity, and quality of life. Occupational therapy interventions for schizophrenia include activity scheduling, social skills training, cognitive rehabilitation, vocational training, life skills training, sensory modulation, stress management, and psychoeducation. Various theoretical models guide occupational therapy practice in schizophrenia, such as the Model of Human Occupation (MOHO), Person–Environment–Occupation (PEO) Model, Sensory Integration Theory, Cognitive Behavioral Frame of Reference, and Recovery Model. These models emphasize the dynamic interaction between the person, environment, and occupation in determining functional performance and well-being. Research evidence supports the effectiveness of occupational therapy in improving daily functioning, social skills, work

readiness, motivation, and quality of life in individuals with schizophrenia. However, despite advances in pharmacological treatment, functional recovery remains limited for many patients. This highlights the need for innovative, structured, and occupation-focused psychosocial interventions that address lifestyle patterns, occupational balance, and personal recovery.

Concept of Occupational Balance and Lifestyle in Mental Health : Human life is organized around daily occupations, which include self-care, work, leisure, rest, and social participation. The subjective experience of having the "right amount and variation" of activities in one's daily life is referred to as occupational balance. Occupational balance is closely linked to physical health, psychological well-being, life satisfaction, and quality of life. Imbalance in daily activities—whether through over-activity, under-activity, or lack of meaningful engagement—has been associated with stress, fatigue, low mood, social isolation, and decreased life satisfaction. Individuals with schizophrenia frequently experience severe occupational imbalance. Many spend long hours in inactivity, institutional routines, or unstructured environments with minimal engagement in meaningful occupations. Disruption of sleep–wake cycles, poor nutrition, sedentary lifestyle, limited social interaction, and lack of productive roles are commonly observed. Such disrupted lifestyle patterns further worsen psychological functioning and increase the risk of physical comorbidities such as obesity, diabetes, and cardiovascular disease.

Balancing Everyday Lifestyle (BEL) Approach: The Balancing Everyday Lifestyle (BEL) approach is an occupation-focused, group-based lifestyle intervention developed within occupational therapy. The BEL program aims to support individuals with mental illness in achieving a more balanced, meaningful, and health-promoting daily life. It is grounded in the principles of occupational balance, personal recovery, and client-centered practice. The BEL intervention focuses on helping participants explore and reflect on their daily activities, identify imbalances, recognize meaningful occupations, and set personally relevant goals for lifestyle change. Key areas addressed in the BEL program include: Balance between activity and rest, Meaningful engagement in daily occupations, Social relationships and participation, Physical activity and exercise, Nutrition and self-care, Leisure and relaxation, Productivity and role fulfillment. The BEL program is typically delivered over a 16-week period through structured group sessions, including two booster sessions. It encourages participants to actively reflect on their lifestyle patterns, experiment with changes, and work toward personally meaningful goals in a supportive group environment. Unlike traditional symptom-focused interventions, BEL emphasizes person-centered recovery, empowerment, and occupational participation.

Research evidence from international studies, particularly in Sweden, has demonstrated that BEL is effective in improving activity engagement, occupational balance, psychological well-being, quality of life, and overall functioning in individuals with mental illness. However, there is a significant lack of evidence regarding the effectiveness of the BEL approach in the Indian mental health context, especially among patients with schizophrenia.

Conventional occupational therapy for schizophrenia primarily focuses on: Improving self-care and activities of daily living (ADL), Enhancing social and communication skills, Increasing work skills and vocational readiness, Developing coping strategies, Reducing maladaptive behaviors, Promoting structured routines and habits. While these interventions are effective in improving specific functional skills, they often do not explicitly address broader lifestyle patterns, occupational balance, and personal meaning in daily life. Conventional therapy may be therapist-directed and task-oriented, whereas lifestyle-based approaches like BEL are more reflective, client-centered, and holistic.

Comparing a structured lifestyle intervention such as BEL with conventional occupational therapy is therefore essential to understand whether addressing occupational balance and lifestyle patterns provides additional benefits in improving psychological functioning and overall recovery in schizophrenia.

Need for the Present Study: Despite advancements in pharmacological and psychosocial treatments, schizophrenia continues to be associated with long-term functional disability. Many individuals remain unemployed, socially isolated, and dependent on family members even after symptom stabilization. In India, access to comprehensive rehabilitation services is limited, and research on occupation-based lifestyle interventions is scarce. Most occupational therapy interventions in Indian psychiatric settings focus on symptom management, behavior modification, and vocational training. Very few studies have explored the impact of lifestyle-based occupational therapy interventions on psychological functioning, occupational balance, and quality of life in schizophrenia.

The BEL approach has shown promising results internationally, but its applicability, feasibility, and effectiveness in the Indian context remain unexplored. Cultural differences in lifestyle patterns, family roles, social expectations, and healthcare systems necessitate local evidence before such interventions can be widely implemented. Therefore, the present study was undertaken to evaluate the effect of an occupational therapy program based on the Balancing Everyday Lifestyle (BEL) approach versus conventional occupational therapy on psychological functioning of patients with schizophrenia. Psychological functioning in this study was assessed using standardized outcome measures such as the Global Assessment of Functioning (GAF) and the Positive and Negative Syndrome Scale (PANSS). This study aims to contribute to the growing body of evidence supporting occupation-based, recovery-oriented interventions in mental health. It also seeks to provide clinically relevant information for occupational therapists working in psychiatric settings, helping them incorporate lifestyle-based approaches into routine practice for better long-term outcomes.

AIM

To evaluate the effectiveness of an occupational therapy program based on the Balancing Everyday Lifestyle (BEL) approach compared with conventional occupational therapy in improving the psychological functioning of patients with schizophrenia.

OBJECTIVES

Primary Objective: To compare the effect of the Balancing Everyday Lifestyle (BEL)–based occupational therapy program with conventional occupational therapy on psychological functioning in patients with schizophrenia.

Secondary Objectives: To screen patients with schizophrenia using the Mini-Mental Status Examination (MMSE) to determine baseline cognitive status. To measure and compare pre- and post-intervention psychological functioning using the Global Assessment of Functioning (GAF) scale. To measure and compare pre- and post-intervention positive and negative symptoms using the Positive and Negative Syndrome Scale (PANSS). To evaluate the effect of the BEL-based occupational therapy program on symptom severity, activity engagement, and functional participation in patients with schizophrenia. To evaluate the effect of conventional

occupational therapy on psychological functioning and symptom severity in patients with schizophrenia. To determine whether the BEL-based intervention offers additional or superior benefits over conventional occupational therapy in improving psychological functioning, occupational balance, and overall well-being.

METHODOLOGY (MATERIALS AND METHODS)

Research Design: The present study adopted an experimental pre-test and post-test control group design to evaluate the effectiveness of an occupational therapy program based on the Balancing Everyday Lifestyle (BEL) approach compared with conventional occupational therapy in improving the psychological functioning of patients with schizophrenia.

Participants were randomly allocated into:
Experimental Group – Received BEL-based occupational therapy intervention
Control Group – Received conventional occupational therapy intervention

Psychological functioning and symptom severity were assessed before and after the intervention using standardized outcome measures.

Study Setting: The study was conducted at the Department of Psychiatry and Occupational Therapy Unit of a tertiary care mental health hospital in Maharashtra, India. The setting included inpatient and outpatient psychiatric rehabilitation services catering to individuals diagnosed with severe mental illness, including schizophrenia.

Study Duration: The total duration of the study was 6 months, including:
Participant recruitment and screening, Pre-intervention assessment, Intervention period of 12 weeks, Post-intervention assessment, Data analysis and interpretation.

Study Population: The study population included clinically stable patients diagnosed with schizophrenia who were receiving regular psychiatric treatment and occupational therapy services at the study setting.

Sample Size: A total of 30 participants were included in the study. Experimental Group (BEL Group): 15 participants, Control Group (Conventional OT Group): 15 participants

Sampling Technique: A simple random sampling technique was used to allocate participants into the experimental and control groups after meeting the inclusion and exclusion criteria.

Inclusion Criteria: Patients diagnosed with schizophrenia as per DSM-5 criteria. Age group between 18 to 50 years. Both male and female participants. MMSE score of 24 and above
Exclusion Criteria: Comorbid neurological disorders. Severe intellectual disability. Active substance dependence (except nicotine). Acute psychotic exacerbation. Severe medical illness affecting participation

Ethical Considerations: Ethical clearance was obtained from the Institutional Ethics Committee before the commencement of the study. Written informed consent was obtained from all participants. Confidentiality and anonymity of participants were strictly maintained. Participants were informed about their right to withdraw at any point without affecting their treatment.

Outcome Measures

1. Mini-Mental Status Examination (MMSE):Used as a screening tool to assess baseline cognitive functioning. Score Range: 0–30. Cut-off for inclusion: ≥ 24
2. Global Assessment of Functioning (GAF) Scale: Used to assess overall psychological, social, and occupational functioning. Score Range: 0–100. Higher scores indicate better functioning.
3. Positive and Negative Syndrome Scale (PANSS): A standardized tool to assess symptom severity in schizophrenia. It consists of: Positive Symptoms Subscale (7 items) Negative Symptoms Subscale (7 items) General Psychopathology Subscale (16 items) Higher scores indicate greater symptom severity.

Ethical Considerations: Study protocol, informed consent documents, case record form were reviewed and approved by Institutional Ethics Committee. The study was initiated after receiving approvals from Institutional Ethics Committee and Maharashtra University of Health Sciences (MUHS).

INFORMED CONSENT DOCUMENT: Informed consents were taken from patient or relative in the language understood by them.

The Informed Consent document included the following information:

- Nature and objective of the study
- Voluntary participation of subjects along with legal authorized representative
- Confidentiality of data and results
- Willingness to withdraw anytime from study

Procedure of the Study:
The study was conducted in the following phases:
Phase 1 – Screening and Baseline Assessment. Eligible participants were identified based on inclusion and exclusion criteria. MMSE was administered to screen cognitive status. Baseline assessment was carried out using: GAF Scale, PANSS.
Phase 2 – Group Allocation, Participants were randomly assigned into: Experimental Group (n = 15), Control Group (n = 15)
Phase 3 – Intervention Phase (12 Weeks)

Experimental Group: The experimental group received Occupational Therapy program based on Balancing Everyday Lifestyle (BEL) approach. 10 sessions were conducted at an interval of one session (60mins) per week which included:
Phase A – introduction and exploring occupation – consisted of 1 week.
Phase B – working towards better balance – consisted from 2- 8 weeks
Phase C – summarizing and working independently- consisted of 9-10 week.

Week (1) included general introduction and a time for the participants and leaders in the group to get acquainted. It also included the learning of present and past occupational engagement, occupational balance and imbalance in client life.

Week (2 -8) was focused on working towards a better lifestyle balance. Weekly topics included rest and relaxation (sleep), mindfulness, nutrition, physical exercise, leisure activities, social life, relationships and productivity.

Week (9-10) this phase reflected on progress made during the course and to prioritize what they want to work after the course ended.

Intervention according to all the topics: A) Physical exercise: general exercise protocol and aerobic exercise such as warm-ups, walking, breathing exercises, and step-ups to increase the endurance.

B) Social skills training: It refers to the teaching of

interpersonal skills needs to relate efficacy to other people. It included self-expressive skills, other enhancing skills, assertive skills, communication skills. All those skills were achieved by training which included steps such as motivation, demonstration, practice and feedback. Motivation –identify behaviour to learn and explain why important. Demonstration – role behaviour (role play, video tapes models) person watches and observes but does not attempt the behaviour until the practice phase. Practice – to improve learning. Rehearse the desired behaviour by talking, it reduces the anxiety Feedback – end of the treatment sessions and summarized what had to be learned.

C) Nutrition: Weight gain and nutrition are not only a problem for eating disorders (anorexia, bulimia, obesity) but for also the psychiatric patients who are on the medications which predispose a person to gain weight and metabolic syndrome. It was intervened as follows: Cooking program within the general area of self-care Use of flash cards and worksheets and other available educational aids, posters collages and group discussions. Making a file of recipes which are nutritious, inexpensive and uncomplicated. Practice is important thus that can be done by planning out a meal or going out to a restraint and ordering a balanced meal.

D) Mindfulness: The simpler forms to explain the mindfulness are the ABCs of mindfulness. A – for developing awareness – emphasis on cultivating the body awareness. B – being with experience- learn to turn towards difficult experience with an attitude of acceptance. C – making wise choices- learnt to stay with persistent or painful experiences, one is in a better position to judge what the most helpful thing to do next is.

E) Sleep and rest the steps include: Educating clients and caregivers on sleep misconceptions and expectations Addressing secondary conditions that may precipitate diminished sleep quality (e.g., pain, decreased range of motion, depression, anxiety) Encouraging health management behaviours such as smoking cessation, reduced caffeine intake, a balanced diet, and adequate exercise. Establishing predictable routines, including regular times for waking and sleeping. Managing pain and fatigue. Addressing performance deficits or barriers to activities of daily living, particularly for bed mobility and toileting. Establishing individualized sleep hygiene routines (e.g., habits and patterns to facilitate restorative sleep). Teaching cognitive-behavioural and cognitive restructuring techniques, such as leaving the bedroom if awake and returning only when sleepy, or exploring self-talk statements regarding sleep patterns. Increasing coping skills, stress management, and time management Addressing sensory disorders and teaching self-management or caregiver management. Modifying the environment, including noise, light, temperature, bedding, and technology use while in bed. Advocating on a state or national level for laws that protect workers from excessive work schedules that threaten their health or public safety.

F) To improve relationship productivity: With -hold criticism Own your statements Be willing to receive feedback Be present and participate Give yourself a timeout when necessary Keep your tone in check .

Conventional occupational therapy management for schizophrenia: 10 sessions were conducted at an interval of one session (60mins) per week, which included: Teach and support the active use of coping strategies to help manage the effect of symptoms of illness on one's life, including being more organized and able to engage in activities of choice Help to identify and implement healthy habits, rituals, and routines to support a wellness lifestyle by addressing barriers and building on existing abilities Support the identification of personal values, needs, and goals to enable informed, realistic decision making, such as when considering housing and employment options Support the creation and use of a wellness recovery action plan in group or individual sessions Provide information to increase awareness of community-based resources, such as peer-facilitated groups and other support options Provide information on how to monitor physical health concerns (e.g., diabetes management, smoking cessation), develop strategies to control chronic symptoms, and recognize and respond to acute changes in mental health status Support the ability to engage in long-term planning (e.g., budget for major purchases, prepare advanced medical and mental health directives) that leads to meeting personal recovery goals.

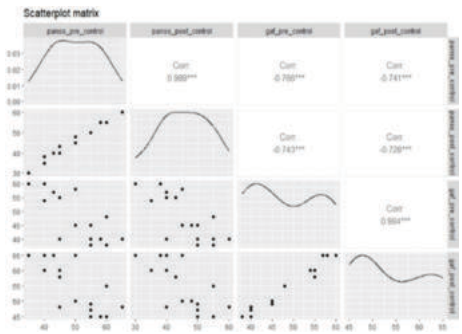
Statistical Analysis

Of 32 enrolled participants, 30 completed the study (15 control, 15 experimental). Data were analyzed using R (v3.6.3). Continuous variables (age, MMSE, GAF, PANSS) are presented as mean ± SD. Between-group differences were assessed using independent t-tests, and within-group (baseline to post-treatment) changes using paired t-tests. One-sided tests with $\alpha = 0.05$ were applied; $p < 0.05$ was considered statistically significant.

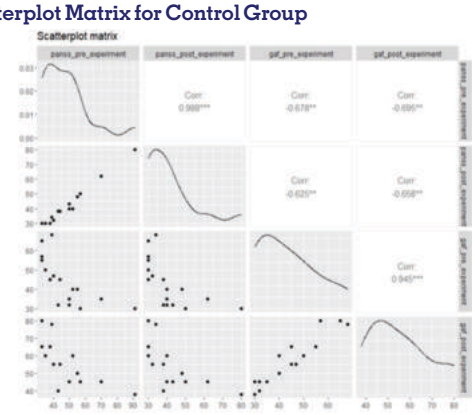
Co-relation Between GAF and PANSS

	Comparison between	Pearson's correlation coefficient	Conclusion
Control group	PANSS Pre & GAF Pre	-0.7660706	Negatively Co-related
	PANSS Post & GAF Post	-0.7278353	Negatively Co-related
Experimental group	PANSS Pre & GAF Pre	-0.6781228	Negatively Co-related
	PANSS Post & GAF Post	-0.6582024	Negatively Co-related

The value of R in control group for pre comparison was -0.7660706 and for the post comparison was -0.7278353. The value of R in experimental group for pre comparison was -0.6781228 and for the post comparison was -0.6582024. In this study the relation between GAF and PANSS was negatively co-related, as psychological functioning increases, symptoms decreases and vice versa.



Scatterplot Matrix for Control Group



Scatterplot Matrix for Experimental Group

DISCUSSION

The present study examined the effectiveness of an occupational therapy program based on the Balancing Everyday Life (BEL) approach compared with conventional occupational therapy in improving psychological functioning among individuals with schizophrenia. Both interventions resulted in significant improvements; however, BEL demonstrated superior outcomes in psychosocial functioning and symptom reduction.

The demographic characteristics of the control and experimental groups were comparable with respect to age and baseline cognitive status, indicating adequate group equivalence. The age distribution aligns with existing epidemiological evidence suggesting that schizophrenia typically manifests from late adolescence to early adulthood, with later onset commonly observed among females. Although a higher proportion of females participated in the study, previous literature suggests that gender differences may influence age of onset and diagnostic practices rather than prevalence, and thus are unlikely to have confounded the intervention outcomes.

Psychosocial functioning, assessed using the Global Assessment of Functioning (GAF), improved significantly in both groups following intervention. The magnitude of improvement was greater in the BEL group, suggesting that structured lifestyle-focused occupational therapy may enhance functioning beyond that achieved through conventional recovery-oriented occupational therapy. These findings are consistent with prior randomized controlled trials demonstrating that BEL interventions improve activity engagement, activity balance, symptom severity, and overall functioning among individuals with mental illness.

Similarly, both groups showed significant reductions in symptom severity as measured by the Positive and Negative Syndrome Scale (PANSS). Improvements were observed across positive, negative, and general psychopathology domains, with greater reductions noted in the BEL group. This supports growing evidence that lifestyle-based and activity-oriented interventions can positively influence symptom profiles in schizophrenia, complementing pharmacological management.

A significant negative correlation was observed between PANSS scores and GAF scores in both groups, indicating that reductions in symptom severity were associated with improved psychological functioning. This relationship is well documented in previous research, which identifies symptom burden—particularly negative symptoms—as a key predictor of functional impairment in schizophrenia.

The superior outcomes associated with BEL may be attributed to its emphasis on meaningful activity engagement, lifestyle balance, social participation, and the use of group processes to foster connection, self-worth, and purpose. Qualitative findings from previous BEL studies highlight processes such as social bonding, re-valuing the self, and meaning-making through shared experiences, which may contribute to sustained functional improvements.

In conclusion, while conventional occupational therapy based on the recovery model was effective in improving psychological functioning, the BEL approach demonstrated significantly greater benefits in enhancing psychosocial functioning and reducing symptom severity in individuals with schizophrenia. These findings support the integration of BEL-based occupational therapy programs within tertiary and community mental health settings.

CONCLUSION

Both conventional occupational therapy and the Balancing Everyday Life (BEL)–based occupational therapy program were effective in improving psychological functioning among individuals with schizophrenia. However, the BEL approach demonstrated greater effectiveness, suggesting its added value in enhancing psychosocial outcomes in this population.

Strengths: This study contributes evidence on the effectiveness of a lifestyle-oriented occupational therapy intervention for schizophrenia. The relatively homogeneous sample with respect to age, gender, clinical characteristics, and baseline psychological functioning strengthens the internal validity of the findings.

Limitations: The study did not examine the long-term sustainability of treatment effects. Additionally, the small sample size limits the generalizability of the results.

Recommendations: Future research should investigate the long-term effectiveness of BEL-based occupational therapy using larger and more diverse samples.

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Informed Written Consent: Informed Written consent was obtained from the patient or their legal guardian for participation in the study.

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Data Availability Statement: Data openly available in a public repository that issues datasets with DOIs.

Conflicts of Interest: the authors declare no conflict of interest.

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