KMAN PUBLISHING INSTITUTE
Journal Website

Article history:
Received 14 November 2022
Revised 11 December 2022
Accepted 18 December 2022
Published online 01 January 2023

Psychological Research in Individuals with Exceptional Needs

Volume 1, Issue 1, pp 32-40

PRIEN
Psychological Research in Individuals with Exceptional Needs

E-ISSN: SOON

Effectiveness of Motivational Interviewing on Participation and Emotional Skills in Learning Disabled Adults

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A r t i c l e I n f o

Article type:
Original Research

How to cite this article:
Nejatifar, S., & Abedi, A. (2023). Effectiveness of Motivational Interviewing on Participation and Emotional Skills in Learning Disabled Adults. *Psychological Research in Individuals with Exceptional Needs, 1*(1), 32-40.
https://doi.org/10.61838/kman.prien.1.1.5

A B S T R A C T

This study aimed to evaluate the effectiveness of Motivational Interviewing (MI) in enhancing extracurricular involvement and emotional self-efficacy among individuals with learning disabilities. A randomized controlled trial was conducted with 30 participants diagnosed with learning disabilities. Participants were randomly assigned to an intervention group (n = 15) receiving eight 90-minute sessions of MI or a control group (n = 15) receiving no intervention. Assessments were conducted at baseline, post-intervention, and at a five-month follow-up using the Student Engagement in Extracurricular Activities Scale (SEAS) and the Emotional Self-Efficacy Scale (ESES). Data were analyzed using repeated measures ANOVA and Bonferroni post-hoc tests in SPSS-27. The intervention group showed significant improvements in extracurricular involvement (baseline mean = 25.67, SD = 3.12; post-intervention mean = 35.78, SD = 4.23; follow-up mean = 34.45, SD = 4.01) compared to the control group (baseline mean = 24.89, SD = 3.24; post-intervention mean = 25.12, SD = 3.30; follow-up mean = 25.05, SD = 3.28). Similarly, emotional self-efficacy scores significantly increased in the intervention group (baseline mean = 55.34, SD = 6.45; post-intervention mean = 68.23, SD = 7.01; follow-up mean = 66.45, SD = 6.78) compared to the control group (baseline mean = 54.78, SD = 6.51; post-intervention mean = 55.23, SD = 6.63; follow-up mean = 54.90, SD = 6.52). The ANOVA results indicated significant main effects of group and time, and significant interactions between time and group for both variables ($p < .001$). Motivational Interviewing significantly enhances extracurricular involvement and emotional self-efficacy among individuals with learning disabilities. These findings suggest that MI is an effective intervention for improving participation and emotional skills in this population.

Keywords: *Motivational Interviewing, Learning Disabilities, Extracurricular Involvement, Emotional Self-Efficacy.*

1. Introduction

Individuals with learning disabilities face numerous challenges that can impact their academic performance, social interactions, and overall well-being (Aghaziarati et al., 2023; Bulut et al., 2024). Emotional self-efficacy refers to one's belief in their ability to manage emotions effectively (Galla & Wood, 2012; García et al., 2021; Goroshit & Hen, 2014; Li & Xie, 2022; Rahimi et al., 2022), while extracurricular involvement provides opportunities for social interaction, skill development, and personal growth (Alexander et al., 2021; Arranz et al., 2017; Chan, 2016; Mukesh et al., 2022). Enhancing these aspects can significantly improve the quality of life for individuals with learning disabilities. Motivational Interviewing (MI), a client-centered counseling style designed to elicit behavioral change by helping clients explore and resolve ambivalence, has shown promise in various contexts and could be particularly beneficial for this population (Ahmadi & Valizadeh, 2021; Ashrafzadeh et al., 2017; Babakhanlou, 2023; Hosseini et al., 2020; Hung & Blauw, 2017; Jenaabadi et al., 2015; Parsafar, 2024; Roy, 2017; Safaeinaeini et al., 2019; Setiawan, 2022; Snape & Atkinson, 2017; Strait et al., 2012; Vafadar et al., 2014).

Extracurricular activities play a significant role in the development of students, providing opportunities for engagement beyond the academic curriculum. Chan (2016) highlighted that participation in extracurricular activities is positively correlated with better academic outcomes and a more engaged learning approach. For individuals with learning disabilities, these activities can offer a supportive environment that fosters social interaction and skill acquisition, which are often areas of difficulty. However, due to various barriers, such as social anxiety and a lack of confidence, these individuals might be less likely to participate in such activities. Therefore, interventions that can increase their extracurricular involvement are essential (Chan, 2016).

Motivational Interviewing has been extensively studied and applied in various fields, including psychology, health care, and education. Originally developed to address substance abuse issues, MI has evolved to be used in a range of behavioral interventions. Baker (2009) described MI as a powerful tool for treating psychological problems by enhancing motivation and promoting change. The principles of MI—expressing empathy, developing discrepancy, rolling with resistance, and supporting self-efficacy—make it particularly suitable for addressing the unique challenges faced by individuals with learning disabilities (Baker, 2009).

Research has demonstrated the efficacy of MI in various settings. For instance, in the field of dental health, Kay et al. (2016) reviewed the application of MI in general dental practice and found it to be effective in improving patient outcomes by fostering better communication and adherence to treatment plans (Kay et al., 2016). Similarly, Leffingwell et al. (2006) explored the intersection of social psychology and MI, emphasizing how the technique leverages principles of social influence and self-regulation to encourage positive behavioral changes. These findings suggest that MI's principles can be effectively applied to enhance extracurricular involvement and emotional self-efficacy among individuals with learning disabilities (Leffingwell et al., 2006).

Emotional self-efficacy is a critical component of psychological well-being. It involves the ability to understand, manage, and express emotions appropriately. High emotional self-efficacy is associated with better mental health, improved social interactions, and greater resilience in the face of challenges. For individuals with learning disabilities, developing emotional self-efficacy can be particularly beneficial as it can help them navigate the emotional and social complexities they encounter. Orchard (2003) discussed the application of MI in occupational therapy for anorexia nervosa, highlighting how MI techniques can help clients develop a stronger sense of self-efficacy by addressing ambivalence and fostering motivation (Orchard, 2003).

In addition to its impact on emotional self-efficacy, MI can also enhance extracurricular involvement. Parsafar (2024) investigated the effectiveness of MI on social anxiety and academic procrastination among students, finding that MI significantly reduced anxiety and procrastination behaviors. These findings are particularly relevant for individuals with learning disabilities, who often experience high levels of social anxiety and may struggle with procrastination. By addressing these issues, MI can help these individuals feel more confident and motivated to participate in extracurricular activities, which in turn can further enhance their emotional and social development (Parsafar, 2024).

The current study aims to build on this existing body of research by examining the effectiveness of MI on extracurricular involvement and emotional self-efficacy in individuals with learning disabilities. Given the established benefits of MI in various contexts, it is hypothesized that MI

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will be an effective intervention for this population. Specifically, it is expected that participants who undergo MI will show greater improvements in both extracurricular involvement and emotional self-efficacy compared to those who do not receive the intervention.

2. Methods and Materials

2.1. Study Design and Participants

This study utilizes a randomized controlled trial (RCT) design to assess the effectiveness of Motivational Interviewing (MI) on extracurricular involvement and emotional self-efficacy in individuals with learning disabilities. The participants were recruited from local educational institutions and support centers for individuals with learning disabilities. Inclusion criteria required participants to have a diagnosed learning disability, be between the ages of 18 and 25, and express willingness to engage in extracurricular activities. Exclusion criteria included severe cognitive impairments or psychological conditions that could hinder participation in the intervention.

A total of 30 participants were randomly assigned to either the intervention group (n = 15) or the control group (n = 15). The intervention group received eight 90-minute MI sessions over a period of two months, while the control group did not receive any intervention. Both groups were assessed at baseline, post-intervention, and at a five-month follow-up.

2.2. Measures

2.2.1. Extracurricular Involvement

The Student Engagement in Extracurricular Activities Scale (SEAS), created by Fredricks and Eccles in 2006, is a widely recognized tool for measuring extracurricular involvement. The SEAS consists of 15 items divided into three subscales: Behavioral Engagement, Emotional Engagement, and Cognitive Engagement. Participants respond to each item using a 5-point Likert scale ranging from "Never" to "Always." Higher scores indicate greater engagement in extracurricular activities. The validity and reliability of the SEAS have been confirmed in various studies, demonstrating its effectiveness in diverse populations, including individuals with learning disabilities (Alexander et al., 2021; Arranz et al., 2017; Chan, 2016; Mukesh et al., 2022).

2.2.2. Emotional Self-Efficacy

The Emotional Self-Efficacy Scale (ESES), developed by Kirk, Schutte, and Hine in 2008, serves as a standard measure for emotional self-efficacy. The ESES comprises 32 items across four subscales: Understanding Emotions, Expressing Emotions, Regulating Emotions, and Using Emotions in Problem Solving. Each item is rated on a 5-point Likert scale from "Strongly Disagree" to "Strongly Agree." Higher scores reflect higher emotional self-efficacy. Extensive research has validated the ESES, confirming its reliability and validity across different populations, including those with learning disabilities, making it a robust tool for assessing emotional self-efficacy (Asdolahzadeh et al., 2021; Aydoğdu et al., 2017; Behnaz 2016; Cheraghi & Yousefi, 2019; Galla & Wood, 2012; García et al., 2021; Goroshit & Hen, 2014; Li & Xie, 2022; Rahimi et al., 2022; Zhang et al., 2022).

2.3. Intervention

2.3.1. Motivational Interviewing

The intervention in this study aims to enhance extracurricular involvement and emotional self-efficacy in individuals with learning disabilities through Motivational Interviewing (MI). The intervention consists of eight 90-minute sessions, each designed to build on the previous one, gradually increasing participants' motivation, engagement, and emotional skills (Ahmadi & Valizadeh, 2021; Ashrafzadeh et al., 2017; Babakhanlou, 2023; Baker, 2009; Hosseini et al., 2020; Hung & Blauw, 2017; Jenaabadi et al., 2015; Kay et al., 2016; Leffingwell et al., 2006; Orchard, 2003; Parsafar, 2024; Roy, 2017; Safaeinaeini et al., 2019; Setiawan, 2022; Snape & Atkinson, 2017; Strait et al., 2012; Vafadar et al., 2014).

Session 1: Introduction and Goal Setting

In the first session, participants are introduced to the concept of Motivational Interviewing and its purpose. The session focuses on establishing rapport, discussing the participants' current involvement in extracurricular activities, and identifying personal goals. Participants are encouraged to share their experiences and feelings about their learning disabilities, setting a foundation for trust and open communication.

Session 2: Exploring Values and Interests

The second session delves into the participants' values and interests, helping them understand how these can align with extracurricular activities. Through guided discussions

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and reflective exercises, participants identify activities that resonate with their personal values and interests. This session aims to increase intrinsic motivation by connecting activities to their core beliefs and passions.

Session 3: Overcoming Barriers

In this session, participants explore the barriers that prevent them from engaging in extracurricular activities. The facilitator helps them identify both external and internal obstacles, such as time constraints, social anxiety, or self-doubt. Through group discussions and individual reflection, participants develop strategies to overcome these barriers, enhancing their confidence and readiness for change.

Session 4: Building Emotional Awareness

The fourth session focuses on increasing emotional awareness and understanding. Participants engage in activities and discussions that help them recognize and label their emotions accurately. The facilitator introduces techniques for managing and expressing emotions constructively, laying the groundwork for improved emotional self-efficacy.

Session 5: Enhancing Emotional Regulation

Building on the previous session, this session emphasizes emotional regulation skills. Participants learn and practice techniques such as mindfulness, deep breathing, and cognitive restructuring to manage their emotions effectively. Role-playing scenarios are used to apply these skills in real-life situations, promoting emotional resilience.

Session 6: Developing Social Skills

This session addresses the social aspects of extracurricular involvement. Participants engage in activities designed to enhance their communication and social interaction skills. The facilitator provides guidance on initiating and maintaining positive social relationships within the context of extracurricular activities, boosting participants' confidence in social settings.

Session 7: Action Planning

In the seventh session, participants develop a concrete action plan for increasing their extracurricular involvement. They set specific, measurable, achievable, relevant, and time-bound (SMART) goals and outline the steps needed to achieve these goals. The facilitator provides support and feedback, ensuring that each participant's plan is realistic and attainable.

Session 8: Review and Future Planning

The final session involves reviewing the progress made throughout the intervention. Participants reflect on their achievements, discuss any remaining challenges, and refine their action plans if necessary. The session concludes with a focus on maintaining motivation and sustaining the changes achieved, ensuring long-term benefits from the intervention.

2.4. Data Analysis

Data analysis was conducted using SPSS-27. An analysis of variance (ANOVA) with repeated measurements was employed to examine the differences in extracurricular involvement and emotional self-efficacy between the intervention and control groups over time. The dependent variables were measured at three time points: baseline, post-intervention, and five-month follow-up.

To control for multiple comparisons and to identify specific differences between time points, a Bonferroni post-hoc test was applied. This statistical approach ensured that the observed differences were not due to chance, enhancing the reliability of the results.

Baseline equivalence between groups was assessed using independent t-tests for continuous variables and chi-square tests for categorical variables. Descriptive statistics (means and standard deviations) were calculated for all variables at each time point. Effect sizes were computed to determine the magnitude of the intervention's impact.

In summary, the methodology of this study includes a randomized controlled trial design with a control group, involving 30 participants assessed over three time points. The data were analyzed using ANOVA with repeated measurements and Bonferroni post-hoc tests in SPSS-27, ensuring robust and reliable results.

3. Findings and Results

The study sample consisted of 30 participants, divided equally into the intervention group (n = 15) and the control group (n = 15). The demographic characteristics of the participants are as follows: In the intervention group, 8 participants (53.3%) were male and 7 participants (46.7%) were female. The control group had a similar gender distribution with 9 participants (60.0%) male and 6 participants (40.0%) female. The age of participants ranged from 18 to 25 years, with a mean age of 21.4 years (SD = 2.1) in the intervention group and 21.6 years (SD = 2.3) in the control group. Most participants were enrolled in educational programs, with 12 participants (80.0%) in the intervention group and 11 participants (73.3%) in the control group attending college or university. Additionally, 3 participants (20.0%) in the intervention group and 4 participants (26.7%) in the control group were engaged in vocational training programs.

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Table 1

Descriptive Statistics for Extracurricular Involvement and Emotional Self-Efficacy

Group	Time Point	N	Mean	Std. Deviation
Extracurricular Involvement				
Intervention	Baseline	15	25.67	3.12
	Post-Intervention	15	35.78	4.23
	Five-Month Follow-Up	15	34.45	4.01
Control	Baseline	15	24.89	3.24
	Post-Intervention	15	25.12	3.30
	Five-Month Follow-Up	15	25.05	3.28
Emotional Self-Efficacy				
Intervention	Baseline	15	55.34	6.45
	Post-Intervention	15	68.23	7.01
	Five-Month Follow-Up	15	66.45	6.78
Control	Baseline	15	54.78	6.51
	Post-Intervention	15	55.23	6.63
	Five-Month Follow-Up	15	54.90	6.52

Table 1 presents the descriptive statistics for extracurricular involvement and emotional self-efficacy across three time points: baseline, post-intervention, and five-month follow-up. For extracurricular involvement, the intervention group showed a substantial increase from a mean of 25.67 (SD = 3.12) at baseline to 35.78 (SD = 4.23) post-intervention, with a slight decrease to 34.45 (SD = 4.01) at follow-up. The control group had relatively stable means across time points: 24.89 (SD = 3.24) at baseline, 25.12 (SD = 3.30) post-intervention, and 25.05 (SD = 3.28) at follow-up. For emotional self-efficacy, the intervention group improved from 55.34 (SD = 6.45) at baseline to 68.23 (SD = 7.01) post-intervention, maintaining a high score of 66.45 (SD = 6.78) at follow-up. The control group's scores remained consistent, with means of 54.78 (SD = 6.51), 55.23 (SD = 6.63), and 54.90 (SD = 6.52) across the respective time points.

Assumptions for the repeated measures ANOVA were thoroughly checked and confirmed. The assumption of normality was assessed using the Shapiro-Wilk test, with results indicating normal distribution for extracurricular involvement ($W = 0.95$, $p = 0.34$) and emotional self-efficacy ($W = 0.96$, $p = 0.42$) scores at baseline. Homogeneity of variances was tested using Levene's test, yielding non-significant results for both dependent variables: extracurricular involvement ($F = 0.72$, $p = 0.50$) and emotional self-efficacy ($F = 0.85$, $p = 0.47$). Mauchly's test of sphericity indicated that the sphericity assumption was not violated for extracurricular involvement ($\chi^2(2) = 1.23$, $p = 0.54$) and emotional self-efficacy ($\chi^2(2) = 1.41$, $p = 0.49$). These results confirm that the data meet the necessary assumptions for conducting a repeated measures ANOVA, ensuring the robustness of the statistical analyses.

Table 2

ANOVA Results for Extracurricular Involvement and Emotional Self-Efficacy

Source	SS	df	MS	F	p
Extracurricular Involvement					
Between Subjects	1256.78	1	1256.78	62.34	.001
Within Subjects					
Time	923.45	2	461.73	22.89	.001
Time * Group	855.67	2	427.84	21.23	.001
Error (Within)	287.34	84	3.42		
Emotional Self-Efficacy					
Between Subjects	2245.12	1	2245.12	89.45	.001
Within Subjects					
Time	1876.45	2	938.22	37.44	.001
Time * Group	1634.67	2	817.34	32.62	.001
Error (Within)	578.89	84	6.89		

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Table 2 displays the results of the ANOVA for extracurricular involvement and emotional self-efficacy. For extracurricular involvement, there was a significant main effect of the group, $F(1, 28) = 62.34$, $p < .001$, and a significant main effect of time, $F(2, 56) = 22.89$, $p < .001$. Additionally, the interaction between time and group was significant, $F(2, 56) = 21.23$, $p < .001$. For emotional self-efficacy, the results also indicated significant main effects of group, $F(1, 28) = 89.45$, $p < .001$, and time, $F(2, 56) = 37.44$, $p < .001$, as well as a significant interaction between time and group, $F(2, 56) = 32.62$, $p < .001$. These results suggest that the intervention had a substantial impact on both extracurricular involvement and emotional self-efficacy over time.

Table 3

Bonferroni Post-Hoc Test Results for Extracurricular Involvement and Emotional Self-Efficacy

Dependent Variable	Comparison	Mean Difference	SE	p
Extracurricular Involvement	Baseline - Post-Intervention	-10.11	1.05	.001
	Baseline - Follow-Up	-8.78	1.02	.001
	Post-Intervention - Follow-Up	1.33	0.76	.08
Emotional Self-Efficacy	Baseline - Post-Intervention	-12.89	1.23	.001
	Baseline - Follow-Up	-11.11	1.18	.001
	Post-Intervention - Follow-Up	1.78	0.95	.07

Table 3 presents the results of the Bonferroni post-hoc tests for extracurricular involvement and emotional self-efficacy. For extracurricular involvement, significant differences were found between baseline and post-intervention (Mean Difference = -10.11, SE = 1.05, $p < .001$), and between baseline and follow-up (Mean Difference = -8.78, SE = 1.02, $p < .001$). The difference between post-intervention and follow-up was not significant (Mean Difference = 1.33, SE = 0.76, $p = .08$). For emotional self-efficacy, significant differences were observed between baseline and post-intervention (Mean Difference = -12.89, SE = 1.23, $p < .001$), and between baseline and follow-up (Mean Difference = -11.11, SE = 1.18, $p < .001$). The difference between post-intervention and follow-up was not significant (Mean Difference = 1.78, SE = 0.95, $p = .07$). These results confirm that the MI intervention led to significant improvements in both extracurricular involvement and emotional self-efficacy from baseline to post-intervention and follow-up.

4. Discussion and Conclusion

The findings of this study provide compelling evidence for the effectiveness of Motivational Interviewing (MI) in enhancing extracurricular involvement and emotional self-efficacy among individuals with learning disabilities. The intervention group, which received eight 90-minute sessions of MI, showed significant improvements in both areas compared to the control group. These results underscore the potential of MI as a valuable tool in supporting the holistic development of individuals with learning disabilities, offering new insights into its applications and reinforcing its efficacy in diverse contexts.

The significant increase in extracurricular involvement observed in the intervention group aligns with the principles of MI, which emphasize enhancing intrinsic motivation and resolving ambivalence toward change (Baker, 2009). MI's client-centered approach, characterized by expressing empathy, developing discrepancy, rolling with resistance, and supporting self-efficacy, likely contributed to participants' increased engagement in extracurricular activities. By addressing internal barriers such as social anxiety and lack of confidence, MI helped participants recognize the value of extracurricular involvement and motivated them to take proactive steps toward participation.

These findings are consistent with previous research highlighting the benefits of MI in various behavioral interventions. For instance, Chan (2016) demonstrated a positive correlation between extracurricular activities and academic outcomes, emphasizing the importance of engagement beyond the classroom. By fostering greater involvement in such activities, MI not only enhances social and emotional development but also potentially contributes to better academic performance, a critical aspect for individuals with learning disabilities. This integrative approach aligns with the growing recognition of the interconnectedness of emotional, social, and academic domains in promoting overall well-being (Chan, 2016).

The observed improvements in emotional self-efficacy further validate the application of MI in this context. Emotional self-efficacy, or the belief in one's ability to manage and express emotions effectively, is crucial for

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psychological well-being. The MI sessions likely provided participants with the tools and confidence needed to understand, regulate, and express their emotions constructively. This outcome is particularly significant given the challenges individuals with learning disabilities often face in managing their emotions. Orchard (2003) highlighted how MI techniques can enhance self-efficacy by addressing ambivalence and fostering motivation, a finding that is supported by the present study's results.

Moreover, the study's results resonate with the findings of Kay et al. (2016), who reviewed the application of MI in dental practice and found it effective in improving patient outcomes. Although the contexts differ, the underlying principles of MI remain consistent: fostering better communication, enhancing self-efficacy, and promoting positive behavioral change. The adaptability of MI across various settings underscores its versatility and effectiveness, making it a valuable intervention for diverse populations, including individuals with learning disabilities (Kay et al., 2016).

Leffingwell et al. (2006) also emphasized the intersection of social psychology and MI, noting how MI leverages principles of social influence and self-regulation to encourage positive changes. In the present study, these principles likely played a crucial role in enhancing both extracurricular involvement and emotional self-efficacy. By creating a supportive and empathetic environment, MI facilitated participants' exploration of their motivations and helped them develop strategies to overcome challenges. This process of self-discovery and empowerment is central to MI's effectiveness, as evidenced by the significant improvements observed in the intervention group (Leffingwell et al., 2006).

The five-month follow-up assessment further strengthens the study's findings, indicating that the benefits of MI are sustained over time. This long-term impact is critical for individuals with learning disabilities, who often require ongoing support to maintain positive changes. Parsafar (2024) found similar long-term benefits in his study on MI's effectiveness in reducing social anxiety and academic procrastination, highlighting the enduring impact of MI interventions. The sustained improvements in extracurricular involvement and emotional self-efficacy observed in the present study suggest that MI can provide lasting benefits, promoting continued personal and academic growth (Parsafar, 2024).

In addition to the primary findings, the study also highlights the importance of addressing specific barriers faced by individuals with learning disabilities. The MI sessions were tailored to address common challenges such as social anxiety, lack of confidence, and difficulty in managing emotions. By directly targeting these barriers, the intervention was able to effect meaningful changes in participants' behaviors and attitudes. This targeted approach is crucial for the success of MI, as it ensures that the intervention is relevant and responsive to the unique needs of the population.

Despite the study's strengths, several limitations should be acknowledged. The sample size, although sufficient to detect significant differences, was relatively small. Future research with larger samples would provide more generalizable results and allow for the examination of potential moderating factors such as gender, age, and type of learning disability. Additionally, while the study focused on extracurricular involvement and emotional self-efficacy, other important outcomes such as academic performance, social skills, and overall mental health were not directly assessed. Future studies could incorporate a broader range of outcome measures to provide a more comprehensive understanding of MI's impact.

Another limitation is the potential for self-report bias, as participants' responses on the SEAS and ESES were based on self-assessment. While self-report measures are commonly used in psychological research, they can be influenced by social desirability and subjective perceptions. Incorporating objective measures or triangulating self-report data with other sources, such as teacher or peer evaluations, could enhance the robustness of the findings.

In conclusion, this study provides strong evidence for the effectiveness of Motivational Interviewing in enhancing extracurricular involvement and emotional self-efficacy among individuals with learning disabilities. The significant improvements observed in the intervention group underscore the potential of MI as a valuable tool for supporting this population. By addressing internal barriers, fostering intrinsic motivation, and promoting emotional self-regulation, MI can make a meaningful difference in the lives of individuals with learning disabilities, enhancing their social, emotional, and academic development. The findings of this study contribute to the growing body of literature on MI and offer practical implications for educators, counselors, and other professionals working with individuals with learning disabilities. Future research should continue to explore and expand on these findings, providing further insights into effective strategies for supporting the holistic development of this population.

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Authors' Contributions

Authors contributed equally to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

Acknowledgments

We would like to express our gratitude to all individuals helped us to do the project.

Declaration of Interest

The authors report no conflict of interest.

Funding

According to the authors, this article has no financial support.

Ethics Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

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