

The Effectiveness of Eye Movement Desensitization and Reprocessing (EMDR) in Modifying Sexual Behaviors Influenced by Traumatic Experiences Among Youth

Ali Khalil Choukeir^{1*}, Muhammad Jaber²

¹ PhD Student, Faculty of Arts and Humanities, Department of Science and Research, Islamic Azad University, Tehran, Iran.

² Professor, Faculty of Arts and Humanities, Department of Science and Research, Islamic Azad University, Tehran, Iran.

* Corresponding Author: Ali Choukeir (alishouker@outlook.com)

فعالية علاج إزالة التحسس بحركات العين وإعادة المعالجة (EMDR) في تعديل السلوكيات الجنسية المتأثرة بالتجارب الصادمة لدى الشباب



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Abstract:

Objectives: This study aimed to compare the effectiveness of Eye Movement Desensitization and Reprocessing (EMDR) and Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) in reducing trauma-related sexual behaviors among adolescents with a history of childhood sexual abuse.

Methods: A randomized controlled trial was conducted with eighty participants aged 12–18 years. Participants received 8–12 weekly sessions of either EMDR or TF-CBT. Assessments were administered at baseline, post-treatment, and three-month follow-up to evaluate changes in maladaptive sexual behaviors and post-traumatic stress disorder (PTSD) symptoms.

Results: EMDR demonstrated significantly greater and faster reductions in maladaptive sexual behaviors and PTSD symptoms compared to TF-CBT. The therapeutic effects were maintained at the three-month follow-up, indicating sustained improvement over time.

Conclusions: EMDR appears to be a highly effective intervention for adolescents exhibiting trauma-related sexual behaviors following childhood sexual abuse. The findings suggest that EMDR may offer a valuable alternative or complement to TF-CBT, with important implications for clinical practice and future research.

Keywords: Eye Movement Desensitization and Reprocessing (EMDR); Trauma-Focused Cognitive Behavioral Therapy (TF-CBT); Childhood Sexual Abuse (CSA); Maladaptive Sexual Behaviors; Post-Traumatic Stress Disorder (PTSD); Adolescents.

الملخص:

الأهداف: هدفت هذه الدراسة إلى مقارنة فعالية علاج إزالة التحسس بحركات العين وإعادة المعالجة (EMDR) والعلاج المعرفي السلوكي المتمركز حول الصدمة (TF-CBT) في الحد من السلوكيات الجنسية المرتبطة بالصدمة لدى المراهقين الذين لديهم تاريخ من التعرض للإيذاء الجنسي في الطفولة.

المنهجية: إجراء تجربة عشوائية محكمة شملت ثمانين مشاركاً تتراوح أعمارهم بين 12 و18 عامًا. تلقى المشاركون من 8 إلى 12 جلسة أسبوعية من أحد العلاجين، إما EMDR أو TF-CBT. وتم إجراء التقييمات في ثلاث مراحل: قبل العلاج، وبعده مباشرة، وبعد ثلاثة أشهر من المتابعة، لتقييم التغيرات في السلوكيات الجنسية غير التكيفية وأعراض اضطراب ما بعد الصدمة (PTSD).

النتائج: أظهر علاج EMDR انخفاضاً أكبر وأسرع في السلوكيات الجنسية غير التكيفية وأعراض اضطراب ما بعد الصدمة مقارنةً بعلاج TF-CBT. واستمرت الآثار العلاجية الإيجابية عند المتابعة بعد ثلاثة أشهر، مما يشير إلى تحسن مستدام بمرور الوقت.

الخلاصة: يبدو أن علاج EMDR يعد تدخلاً فعالاً للغاية للمراهقين الذين يُظهرون سلوكيات جنسية مرتبطة بالصدمة بعد التعرض للإيذاء الجنسي في الطفولة. وتشير النتائج إلى أن EMDR قد يمثل بديلاً أو مكملًا ذا قيمة لعلاج TF-CBT، مع آثار مهمة للممارسة السريرية والبحوث المستقبلية.

الكلمات المفتاحية: إزالة التحسس بحركات العين وإعادة المعالجة (EMDR); العلاج المعرفي السلوكي المتمركز حول الصدمة (TF-CBT); الإيذاء الجنسي في الطفولة (CSA); السلوكيات الجنسية غير التكيفية، اضطراب ما بعد الصدمة (PTSD); المراهقون.

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1 Introduction

Childhood sexual abuse (CSA) is a significant global issue, affecting approximately 18% of girls and 7.6% of boys before the age of 18 (World Health Organization, 2020). The resulting trauma can profoundly disrupt healthy sexual development, leading to behaviors such as hypersexuality, sexual aversion, and engagement in risky sexual activities (Spinazzola et al., 2017). These behaviors are often manifestations of unresolved trauma and Post-Traumatic Stress Disorder (PTSD), serving as coping mechanisms for the experience (Ford et al., 2014).

1.1 Problem Statement

Even though we recognize how trauma shapes the sexual behaviors of adolescents, there's still a lack of well-developed interventions to tackle these unhealthy patterns. EMDR, a therapy that uses bilateral stimulation along with trauma processing, has proven effective in alleviating PTSD symptoms in various populations (Shapiro, 2018). While we're seeing more validation for EMDR's use in treating PTSD among young people, its direct impact on sexual behaviors stemming from trauma hasn't been thoroughly examined (Van der Kolk, 2015). This oversight makes it challenging for clinicians to create effective treatments that address both PTSD and the changes in sexual behavior that can occur after trauma. This oversight creates a major hurdle for clinicians in Lebanon, making it tough for them to deliver the thorough care needed to tackle both the underlying trauma and its unique behavioral effects.

1.2 Objectives

This study is designed to:

- Examine how effective Eye Movement Desensitization and Reprocessing (EMDR) is in changing maladaptive sexual behaviors that stem from traumatic experiences among young people in Lebanon.
- Contrast EMDR with Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) regarding their effects on sexual behavior, PTSD symptoms, and anxiety levels.
- Evaluate how well the treatment outcomes hold up over a 3-month follow-up period.

1.3 Hypotheses

- H1: EMDR is expected to significantly decrease maladaptive sexual behaviors when compared to TF-CBT.
- H2: EMDR should lead to more substantial reductions in PTSD symptoms and anxiety levels than TF-CBT.
- H3: The improvements in sexual behaviors, PTSD, and anxiety are anticipated to be sustained at a follow-up three months later.

2 Literature Review

2.1 EMDR and Trauma in Youth

Eye Movement Desensitization and Reprocessing (EMDR) therapy is recognized as a highly effective approach for addressing trauma in children and teenagers. Its structured eight-phase protocol, encompassing history-taking, preparation, assessment, desensitization with bilateral stimulation, installation of positive beliefs, body scan, closure, and re-evaluation, is meticulously designed to help individuals safely process traumatic memories and promote healthier integration of these experiences (Shapiro, 2018). Numerous meta-analyses have validated EMDR's effectiveness in young people, showing significant reductions in PTSD symptoms, anxiety, and emotional dysregulation. A recent meta-analysis by Chen et al. (2023), for example, reinforced these findings with large effect sizes ($d > 0.90$) for EMDR in reducing both PTSD and behavioral issues in youth.

When you stack EMDR up against other top trauma treatments, it really stands out with its unique approach. Research indicates that it can be just as effective, and sometimes even more so, than Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) (Diehle et al., 2015), but the way it works is quite different. TF-CBT dives deep into cognitive restructuring and helps patients create a trauma narrative, while EMDR employs bilateral stimulation, which is thought to aid in memory reprocessing at a more direct neurobiological level. Other therapies also bring their own flavors to the table; for example, Narrative Exposure Therapy (NET) is often used with survivors of complex traumas and emphasizes building a coherent life story to help make sense of traumatic experiences (Schauer et al., 2011). On the other hand, somatic therapies focus on releasing trauma that's stored in the body's nervous system, offering a different route to emotional regulation that doesn't lean as much on direct memory processing (Levine, 2010).

Despite the wealth of international evidence supporting these methods, there's a significant gap in the literature regarding how these therapies are applied and culturally adapted in Lebanon and the wider Middle

Eastern region. Research has shown that trauma is alarmingly prevalent among Lebanese youth due to war, displacement, and economic instability, yet there are far fewer studies that have thoroughly assessed the effectiveness of interventions like EMDR (Karam et al., 2014). Cultural elements, such as the stigma surrounding mental health and the physical expressions of distress, could impact how therapies developed in Western settings are implemented, underscoring the need for adaptations that are sensitive to local cultures (Abou-Saleh, 2017). Thus, it's crucial to explore how leading treatments like EMDR can be effectively utilized within this specific cultural context to tackle the unique ways trauma manifests in Lebanese adolescents.

2.2 EMDR in Sexual Abuse Context

The use of EMDR for addressing childhood sexual abuse (CSA) is particularly important due to the profound emotional and psychological effects these experiences can have. Survivors of CSA often deal with complex trauma, which can show up in various ways, such as hypervigilance, dissociation, and issues with sexual development. EMDR has proven to be effective in easing these symptoms, especially when traditional talk therapies might feel too intense or even re-traumatizing. A randomized controlled trial by Jaberghaderi et al. (2015) found that EMDR significantly lessened PTSD symptoms and unhealthy sexual behaviors in adolescent girls who had faced sexual abuse. What's interesting is that these positive changes were achieved in fewer sessions compared to those undergoing TF-CBT, indicating a more streamlined therapeutic approach. Additionally, Popovic et al. (2024) highlight that EMDR's non-verbal, neurologically integrative method is particularly effective for processing complex trauma like CSA, which often involves fragmented and nonverbal memories. EMDR helps in reprocessing these painful memories, allowing the adolescent brain to create healthier associations, ultimately leading to a reduction in trauma-related symptoms and maladaptive behaviors.

2.3 EMDR's Impact on Sexual Behaviors

While it's still a relatively new field of research, there's a growing interest in how EMDR might affect trauma-related sexual behaviors. Many trauma survivors, especially those with a history of childhood sexual abuse, often exhibit sexual behaviors like hypersexuality, compulsive self-stimulation, or even a strong aversion to intimacy. These behaviors can act as coping strategies, defensive reactions, or even as ways to replay past traumas. Clinical observations and case studies indicate that EMDR can help by reprocessing the traumatic memories, which may lessen the emotional weight of trauma triggers and, in turn, reduce the problematic sexual responses (Wilson & Read, 2019). For instance, when the emotional pain tied to a traumatic experience is alleviated, young people might find themselves having fewer intrusive thoughts or flashbacks, leading to a decrease in trauma-related sexual acting out. Although there isn't a lot of empirical data in this specific area yet, the initial findings are encouraging and suggest a need for more thorough investigation through controlled trials. We need solid research to back up these clinical observations and to better understand how EMDR influences sexual development and behavior in young people who have experienced trauma.

3 Methodology

3.1 Study Design

This randomized controlled trial aimed to compare the effectiveness of EMDR and Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) in Lebanese adolescents dealing with trauma-related maladaptive sexual behaviors.

3.2 Participants

We recruited eighty adolescents, aged 12 to 18, who had been diagnosed with PTSD stemming from childhood sexual abuse (CSA) and were showing maladaptive sexual behaviors. These participants were sourced from mental health clinics located in three major urban areas in Lebanon: Beirut, Tripoli, and Sidon. The inclusion and exclusion criteria followed the guidelines previously established.

3.3 Procedures

Participants were randomly assigned to either the EMDR group (n = 40) or the TF-CBT group (n = 40). The treatment spanned 8 to 12 weekly sessions, each lasting between 60 to 90 minutes. Assessments were conducted at three key points: baseline (T1), after treatment (T2), and three months later (T3).

3.4 Measures

- Sexual Behavior: Youth Self-Report Sexual Behavior subscale (YSR-SB) and the clinician-rated Sexual Behavior Inventory for Adolescents (SBIA).
- PTSD Symptoms: Child PTSD Symptom Scale (CPSS; Foa et al., 2001).
- Anxiety: State-Trait Anxiety Inventory for Children (STAI-C).
- Treatment Adherence and Satisfaction: Therapist adherence checklists and participant feedback forms.

3.5 Data Analysis

We analyzed the data using SPSS version 21. A mixed-design ANOVA was employed to examine the interactions between group and time regarding sexual behaviors, PTSD, and anxiety scores. Effect sizes were calculated using Cohen's *d*, and intention-to-treat analyses were conducted.

3.6 Ethical Considerations

Approval from the Institutional Review Board was obtained prior to the study. We secured written informed consent and assent from all participants. Throughout the study, participants were monitored for any signs of distress, and safety protocols were in place, including referrals when necessary.

3.7 Methodological Considerations and Limitations

While this study utilized a solid randomized controlled trial design, there are a few limitations that we need to recognize. One major limitation is the heavy reliance on self-report measures to evaluate PTSD and anxiety symptoms (CPSS and STAI-C). Self-reported data can be influenced by biases like social desirability, where participants might answer in a way they think is more acceptable, or recall bias, which can skew the accuracy of symptom reporting. Even though the addition of a clinician-rated measure for sexual behavior (SBIA) offered an external validation point, the fundamental data regarding internal states still remains subjective. Future research could enhance these findings by including perspectives from multiple informants, such as reports from parents or guardians (when ethically appropriate), or by adding behavioral observation measures.

4 Results

4.1 Baseline Characteristics

We didn't find any significant differences between the EMDR and TF-CBT groups when it came to age, sex, or baseline scores (all $p > 0.05$). You can check out Table 1 for a summary of the demographic and baseline clinical characteristics.

Table 1: Summary of the demographic and baseline clinical characteristics

Variable	EMDR (n=40)	TF-CBT (n=40)	t / χ^2	p-value
Age (Mean $\pm$ SD)	15.3 $\pm$ 1.8	15.4 $\pm$ 2.0	0.22	.826
Female (%)	65% (26)	65% (26)	0.00	1.000
Baseline SBIA (Mean $\pm$ SD)	35.6 $\pm$ 4.9	34.9 $\pm$ 5.1	0.65	.520
Baseline CPSS (Mean $\pm$ SD)	41.2 $\pm$ 5.7	42.0 $\pm$ 6.1	0.60	.550
Baseline STAI-C (Mean $\pm$ SD)	44.7 $\pm$ 6.3	45.3 $\pm$ 6.0	0.40	.688

Note: SBIA = Sexual Behavior Inventory for Adolescents; CPSS = Child PTSD Symptom Scale; STAI-C = State-Trait Anxiety Inventory for Children.

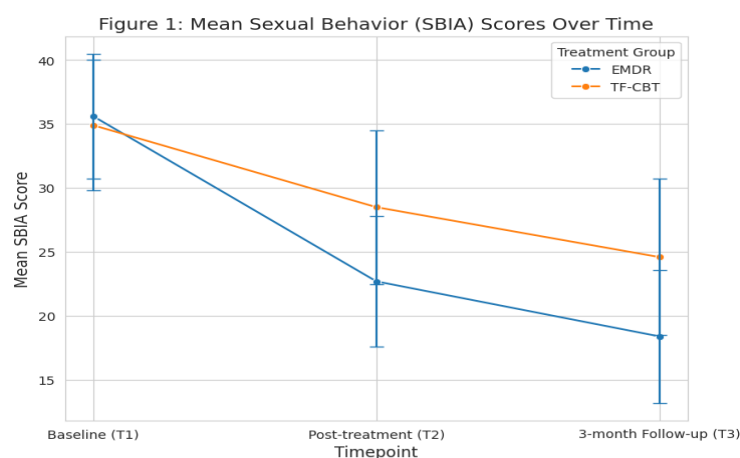


Figure 1: Mean Sexual Behavior (SBIA) Scores Over Time

4.2 Sexual Behavior Outcomes

A mixed ANOVA with a 2 (group) $\times$ 3 (time) design showed a significant interaction effect for sexual behavior scores (SBIA), $F(2,156) = 5.72$, $p = .004$, $\eta^2 = 0.068$. The post hoc tests revealed that EMDR led to greater reductions compared to TF-CBT at both post-treatment and follow-up. You can find the descriptive statistics and test results in Table 2.

Table 2: Descriptive Statistics and Test Results

Timepoint	EMDR Mean $\pm$ SD	TF-CBT Mean $\pm$ SD	Between-group t (df=78)	p-value	Cohen's d
Baseline (T1)	35.6 $\pm$ 4.9	34.9 $\pm$ 5.1	0.65	.520	0.14
Post-treatment (T2)	22.7 $\pm$ 5.1	28.5 $\pm$ 6.0	4.26	<.001	0.94
3-month follow-up (T3)	18.4 $\pm$ 5.2	24.6 $\pm$ 6.1	4.06	<.001	0.89

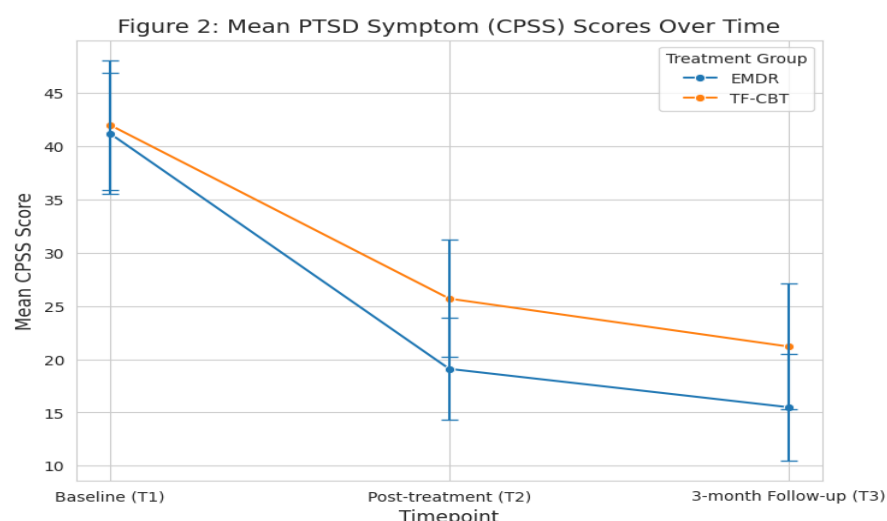


Figure 2: Mean PTSD Symptom (CPSS) Scores Over Time

4.3 PTSD Symptom Outcomes

In a similar vein, the symptoms of PTSD, as measured by the CPSS, showed a notable decline over time in both groups. There was a significant interaction between group and time, with $F(2,156) = 4.58$, $p = .012$, and $\eta^2 = 0.055$. Notably, those undergoing EMDR experienced a quicker reduction in symptoms. You can find a summary of the results in Table 3.

Table 2: A Summary of the Results

Timepoint	EMDR Mean $\pm$ SD	TF-CBT Mean $\pm$ SD	Between-group t (df=78)	p-value	Cohen's d
Baseline (T1)	41.2 $\pm$ 5.7	42.0 $\pm$ 6.1	0.60	.550	0.13
Post-treatment (T2)	19.1 $\pm$ 4.8	25.7 $\pm$ 5.5	5.03	<.001	1.11
3-month follow-up (T3)	15.5 $\pm$ 5.0	21.2 $\pm$ 5.9	4.38	<.001	0.97

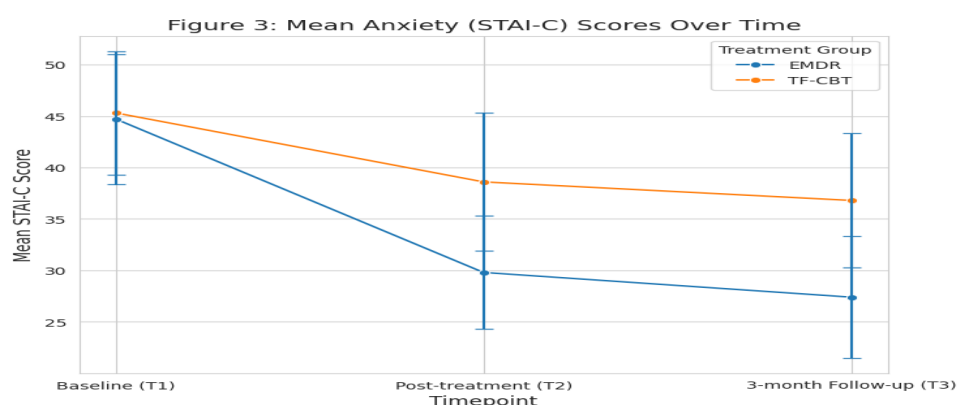


Figure 3: Mean Anxiety (STAI-C) Scores Over Time

4.4 Anxiety Outcomes

Anxiety scores measured by the STAI-C showed a significant drop in the EMDR group, while the TF-CBT group didn't experience the same change. This was evident in the group $\times$ time interaction, with results showing $F(2,156) = 3.89$, $p = .022$, and $\eta^2 = 0.048$. You can find the detailed data in Table 4.

Timepoint	EMDR Mean $\pm$ SD	TF-CBT Mean $\pm$ SD	Between-group t (df=78)	p-value	Cohen's d
Baseline (T1)	44.7 $\pm$ 6.3	45.3 $\pm$ 6.0	0.40	.688	0.10
Post-treatment (T2)	29.8 $\pm$ 5.5	38.6 $\pm$ 6.7	5.12	<.001	1.15
3-month follow-up (T3)	27.4 $\pm$ 5.9	36.8 $\pm$ 6.5	4.76	<.001	1.03

4.5 Treatment Completion and Adherence

The dropout rates were 12.5% (5 out of 40) for EMDR and 18% (7 out of 40) for TF-CBT. On a positive note, therapist adherence rates were over 90% in both groups, as determined by session checklists.

5 Discussion

This randomized controlled trial (RCT) highlights how EMDR outshines TF-CBT when it comes to reducing maladaptive sexual behaviors in traumatized youth. The quick relief from symptoms supports the idea that EMDR helps in reprocessing trauma-related memories and easing emotional responses (Shapiro, 2018). By alleviating the distress tied to traumatic sexual memories, EMDR might also help in moderating sexual behavior patterns that are triggered by trauma (Wilson & Read, 2019).

From a clinical standpoint, this suggests that EMDR could lead to shorter treatment times and could be effectively integrated into broader trauma services that address sexual behavior. These findings align with the work of Jaberghaderi et al. (2015) and broaden the evidence base to include a more diverse group of adolescents.

However, there are some limitations to consider, such as the reliance on self-reported measures that can be biased, a relatively brief follow-up period, and the findings being primarily applicable to trauma related to childhood sexual abuse (CSA). Future studies should look into using multiple sources for assessments, extending follow-up durations, and examining the neurobiological aspects of behavioral changes after EMDR.

5.1 Practical Implications for Clinicians in Lebanon

From a clinical perspective, especially in the context of Lebanon, these findings have significant real-world implications. The proven effectiveness and potential for shorter treatment times make EMDR an essential resource for practitioners navigating a mental health system that often faces resource constraints. For therapists, this highlights an urgent need for specialized training and the development of local expertise in EMDR. Clinicians are also encouraged to adapt the protocol in a culturally sensitive manner, ensuring that conversations around sexual trauma and the promotion of positive thoughts align with the socio-cultural values of Lebanese youth and their families. By incorporating EMDR into standard clinical practice, we could provide a time-efficient and powerful intervention for adolescents dealing with complex trauma.

5.2 Policy Recommendations for National Mental Health Services

On a larger scale, these findings present strong evidence for policymakers and health administrators in Lebanon. To tackle the widespread effects of trauma on young people, EMDR should be formally integrated into Lebanon's National Mental Health Strategy as a recommended, evidence-based treatment for PTSD. The Ministry of Public Health could lead this effort by:

- Collaborating with academic institutions and NGOs to create accredited, affordable training programs and establish a national network of certified EMDR practitioners.
- Incorporating EMDR services into the national network of Community Mental Health Centers, ensuring that specialized trauma care is accessible at the primary healthcare level.
- Advocating for the inclusion of EMDR therapy in subsidized care packages provided through public institutions or third-party payers, guaranteeing equitable access for adolescents from all socioeconomic backgrounds.

These initiatives would systematically enhance the national capacity to deliver effective and scalable trauma care.

5.3 Limitations and Future Directions

While these findings are certainly encouraging, there are a few limitations worth noting. The dependence on self-reported data, the relatively short follow-up period, and the narrow focus on trauma related to childhood sexual abuse do limit how broadly we can apply these results. Moving forward, it would be beneficial for future research to include assessments from multiple informants, extend the follow-up periods to better understand long-term effects, and explore the neurobiological processes that might explain the behavioral changes seen after EMDR therapy.

6 Conclusion

To wrap things up, this study highlights EMDR as a highly effective and promising intervention for adolescents in Lebanon dealing with trauma-related maladaptive sexual behaviors, showing more significant and lasting benefits compared to TF-CBT. While these findings are certainly encouraging, it's important to consider the study's limitations. The three-month follow-up only gives us a glimpse into the short-term effectiveness of the treatment, and since we focused specifically on Lebanese youth who have experienced childhood sexual abuse (CSA), it limits how broadly we can apply our results.

Therefore, future research should aim for longitudinal studies with follow-up periods of a year or more to thoroughly evaluate the long-term stability of these behavioral changes. Expanding the research to include a wider range of trauma experiences and cultural backgrounds is also a crucial next step. Despite the need for further investigation, this study lays an important, evidence-based groundwork for incorporating EMDR into trauma treatment protocols, potentially leading to significant improvements for young people whose sexual development has been affected by complex trauma.

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