

# Intervention in the Treatment of Substance and Behavioral Addiction in Adolescents based on Motivational Interviewing: A Literature Review

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## Abstract:

Motivational Interviewing (MI) is a client-centered intervention that promotes behavioral change through empathy, discrepancy creation, resistance adaptation, and self-efficacy enhancement. This review examines MI's application in managing substance and behavioral addictions in adolescents, highlighting its effectiveness in increasing therapy engagement, curtailing addictive behaviors, improving peer relationships, and addressing coexisting mental health conditions from an ecosystem perspective, including individual psychology, family influence, peer dynamics, and social context. Findings suggest MI effectively reduces adolescent addiction both short- and long-term. Future research should address cultural adaptation, implementation, training, comorbidity management, and long-term efficacy evaluation.

**Keywords:** Motivational Interviewing, adolescent addiction, substance addiction, behavioral addiction, intervention

## Introduction

In recent years, substance and behavioral addictions among adolescents have become critical challenges to global public health. Statistics indicate that approximately 20% of adolescents have engaged in substance use, while 10% experience addictions related to the internet and gaming. These behaviors have substantial negative impacts on adolescents' physical health, psychological development, and social functioning. While existing intervention strategies, such as cognitive behavioral therapy (CBT) and family therapy (FT), have shown some efficacy, they often face issues with low engagement and poor treatment adherence.

Motivational Interviewing (MI), a client-centered approach, shows considerable promise in motivating adolescents to change addictive behaviors by emphasizing empathy and self-efficacy. MI's focus on collaboration rather than confrontation makes it particularly suited to adolescents, who may be resistant to traditional therapeutic approaches. However, the application of MI in adolescent addiction treatment requires systematic evaluation and optimization to ensure its full potential is realized.

The purpose of this literature review is to summarize the current status and research progress of MI in treating ad-

olescent substance and behavioral addictions. This review also explores MI's effectiveness and proposes directions for future research to enhance its application in adolescent addiction interventions.

## Literature Review

### Motivational Interviewing

Motivational Interviewing (MI) assists adolescents in recognizing the conflicts between their current behaviors and personal values or goals, thereby addressing ambivalence. Christenson and Merritts (2017) emphasize that MI practitioners adopt a non-confrontational approach, working collaboratively with resistance rather than opposing it. This approach acknowledges that resistance is a normal reaction, especially when individuals feel pressured to change. MI provides a safe space for individuals to express their concerns without fear of judgment (Balconi & Campanella, 2021). A central focus of MI is enhancing adolescents' self-efficacy, fostering confidence in their ability to make positive changes (Burke et al., 2003).

Guo (2017) highlights that effective addiction treatment for adolescents is grounded in MI principles, which recognize that adolescents may be conflicted about change. By promoting intrinsic motivation, MI enables adolescents to

explore their own motivations and barriers, transforming the treatment process into a collaborative journey that encourages sustainable, long-lasting change (Arkowitz et al., 2017).

## **Ecosystem theory**

Ecosystem theory provides a comprehensive framework for understanding the origins of behavioral issues, particularly adolescent addiction. This approach considers the complex interactions between various factors, such as peer pressure, family dynamics, genetic predispositions, individual psychological traits, and social environment (Li, 2020). The theory posits that disruptions in one area can trigger ripple effects throughout the system, contributing to addiction. For example, early substance use may initiate a cycle reinforced by peer approval and temporary relief from personal difficulties. Additionally, ecosystem theory sheds light on resilience and vulnerability, showing that protective factors within an adolescent's environment can enhance resilience against addiction, while adverse circumstances increase susceptibility (Li, 2020).

## **Theoretical Foundation**

Motivational Interviewing (MI) is a prominent treatment technique for adolescent behavioral and substance addiction (Burke et al., 2003). MI is based on a number of theoretical models that provide insight into its efficacy. Recent studies have improved people's comprehension of its theoretical basis even more.

## **Theoretical basis**

### **Self-Determination Theory (SDT)**

Self-Determination Theory (SDT) suggests that an individual's behavior change is closely linked to the satisfaction of intrinsic motivation, relatedness, competence, and autonomy. In the context of MI, therapists work to increase adolescents' self-efficacy by showing empathy and building trusting relationships. This approach encourages adolescents to recognize and act upon their own motivations for change. For instance, when working with an adolescent struggling with substance use, MI practitioners focus on understanding the adolescent's internal motivations, exploring the underlying reasons for their addictive behaviors, and providing support to strengthen their confidence in making positive changes.

### **Transtheoretical Model (TTM)**

The Transtheoretical Model (TTM) outlines various stages of behavioral change, including pre-contemplation, contemplation, preparation, action, and maintenance. MI offers tailored support at each of these stages, guiding adolescents toward gradual behavior change. For example,

during the pre-contemplation stage, MI therapists help adolescents recognize the negative impacts of their addictive behaviors and build their motivation to change. In the action stage, MI practitioners offer specific strategies and ongoing support to help adolescents implement and sustain behavioral changes.

## **Adaptability of MI Across Stages**

According to Prochaska and DiClemente (2019), MI is well-suited to adolescents at different stages of change because it can be adapted to match their readiness levels, as outlined by TTM. Adolescents exhibit varying levels of motivation and willingness to change, making MI's flexibility essential. This adaptability respects the adolescent's current stage in the change process and provides support that aligns with their unique level of readiness (Prochaska & DiClemente, 2019).

## **Relevant Researches on MI from Ecosystem Theory**

### **Relevant Researches on MI from Ecosystem Theory**

Adolescents often turn to substances as a coping mechanism in response to personal stressors, such as peer relationships, identity development, or academic pressure (Thombs & Osborn, 2019). Certain personality traits, like a high need for excitement or a tendency toward sensation-seeking, may further predispose some adolescents to substance experimentation. Additionally, a lack of emotional support within the family can create an environment conducive to addiction (Thombs & Osborn, 2019). Family dynamics, including ineffective communication or parental substance use, can significantly influence an adolescent's risk of addiction.

In today's digital age, peer influence extends beyond face-to-face interactions, encompassing vast social media networks and online communities. MI has proven effective in adapting to these modern peer dynamics. Its flexibility allows adolescents to make better decisions amid peer pressure, both online and offline, by equipping them with tools to resist negative influences, make thoughtful choices, and maintain their independence (Naar & Suarez, 2021). This adaptability underscores MI's value as a client-centered approach for treating adolescent addiction, enabling young people to navigate complex social landscapes.

The diverse reasons underlying addictive behaviors make it essential to address adolescent addiction from a comprehensive perspective. In cases where addiction coexists with mental health disorders—a scenario known as dual diagnosis—treatment becomes particularly challenging. A holistic approach that addresses the interplay between co-occurring mental health conditions and addiction is crucial for effective intervention. Research indicates that

MI is valuable for treating adolescents with complex comorbidities, as it provides integrated care that addresses both addiction and mental health needs. Given the rising incidence of dual diagnosis cases among adolescents, MI's ability to cater to these multifaceted needs marks a notable advancement in adolescent addiction treatment.

## Methods

To systematically evaluate the effectiveness of Motivational Interviewing (MI) in treating adolescent addiction, a literature review was conducted using databases such as

PubMed and PsycINFO. Keywords included “motivational interviewing,” “adolescent,” “addiction,” “substance use,” and “behavioral addiction.” The inclusion criteria were as follows: (1) participants under 18 years old; (2) MI as the primary intervention method; and (3) study types including randomized controlled trials (RCTs), longitudinal studies, and review articles. Studies were excluded if they did not focus on adolescents or did not employ MI as an intervention. A total of 19 studies met the inclusion criteria and were analyzed in this review.

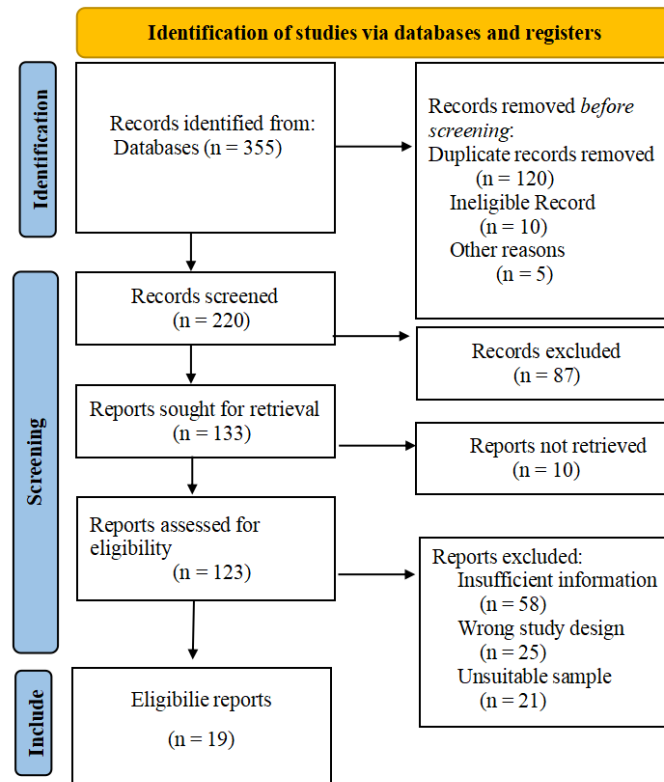


Figure1: PRISMA Flow Diagram

## Results

### Individual Level

At the individual level, MI involves working closely with adolescents struggling with addiction, employing strategies tailored to their unique needs and circumstances (Naar et al., 2023). Techniques such as self-reflective statements, open-ended questions, and empathetic listening encourage adolescents to explore their reasons for wanting change. By respecting the adolescent's autonomy and decision-making capacity, MI fosters a sense of control over the recovery process (Jewell et al., 2018). Pilot studies indicate that MI effectively raises awareness among adolescents regarding the adverse consequences of substance

use (Knight et al., 2005). Meta-analyses of controlled clinical trials provide robust evidence that MI significantly reduces substance use, gaming, and internet addiction among adolescents (Burke et al., 2003). This research underscores MI's potential as a powerful intervention for a broad range of addictive behaviors.

### Family Level

At the family level, MI underscores the importance of involving family members in the adolescent's treatment. Miller and Rollnick (2013) highlight that MI helps family members understand their role in supporting the adolescent's recovery through collaborative, non-confrontational engagement. This approach not only strengthens family bonds but also fosters a more empathetic and supportive

home environment.

## Peer Level

Adolescents place significant value on peer influence and support. MI incorporates peer dynamics by involving adolescents in conversations that encourage healthy behaviors and discourage substance use (Arkowitz et al., 2017). Through peer-to-peer strategies, MI builds a supportive social network that empowers adolescents to make positive decisions and overcome addiction-related challenges. When working with adolescents impacted by peer pressure, MI practitioners use open-ended questions and active listening to foster a safe space where adolescents feel understood and supported (Thombs & Osborn, 2019). This approach strengthens their motivation and capacity for behavioral change.

## Social Context Level

At the social context level, MI considers broader social and environmental factors that influence adolescent addiction. Interventions may include school programs, community-based initiatives, and partnerships with local organizations to create supportive, informed environments that help adolescents manage addiction. MI also seeks to reduce the stigma associated with addiction and promotes policies that support adolescent growth and wellbeing (Ryan, 2017).

## Gap Analysis

Despite its demonstrated efficacy, there are several gaps in the current research on MI for adolescent addiction treatment. Key areas needing further exploration include cultural adaptation, training and implementation, comorbidity considerations, and long-term effectiveness.

### 1. Cultural Adaptation

Current MI research is largely based in Western cultural contexts, with limited studies examining its application in diverse cultural backgrounds. Cultural nuances can significantly affect MI's effectiveness, underscoring the need for future research to develop culturally adapted MI interventions that are sensitive to different cultural values and norms.

### 2. Training and Implementation

While MI has shown promise, there is limited research on its implementation and the effectiveness of training programs, particularly for non-professionals such as teachers and parents. Future studies should investigate how training can improve MI delivery and enhance the intervention's reach and impact, especially in community

and educational settings.

### 3. Comorbidity

Many adolescents struggling with addiction also experience co-occurring mental health conditions, such as depression and anxiety. Further research is needed to examine the mechanisms and effectiveness of MI in managing these comorbidities, as addressing both addiction and mental health conditions requires a comprehensive approach.

### 4. Long-Term Impact

While MI has demonstrated short-term efficacy, its long-term effects require further validation. Longitudinal follow-up studies could provide valuable insights into MI's sustained impact on adolescent addiction treatment, helping to refine and optimize intervention strategies for long-term success.

### 5. Developmental Considerations

Adolescents at different developmental stages may have varying intervention needs. Future research should explore MI's application across different stages of adolescence, such as early and late adolescence, to develop stage-specific intervention strategies that address age-related challenges effectively.

## Conclusion

This review systematically examined the application of Motivational Interviewing (MI) in the treatment of adolescent substance and behavioral addictions. The findings indicate that MI is effective in enhancing treatment engagement, reducing addictive behaviors, improving peer relationships, and addressing mental health challenges among adolescents. Core principles of MI, such as empathy and self-efficacy enhancement, play a crucial role in fostering behavioral change and supporting adolescents in overcoming addiction.

However, existing research presents certain limitations. There is a need for studies that assess MI's application across diverse cultural contexts, explore effective training and implementation methods, address the management of comorbid conditions, and evaluate MI's long-term efficacy. Additionally, understanding how MI can be adapted to meet the developmental needs of adolescents at different stages could enhance its effectiveness as an intervention. Future research should prioritize these areas, conducting studies in multicultural settings, developing long-term follow-up protocols, creating age-specific intervention strategies, and expanding MI training for broader application.

With continued research and practical improvements, MI holds promise as a highly effective approach for addressing adolescent addiction and promoting healthier behavioral outcomes.

**Table 1: Summary of Factors Influencing Delinquency in Selected Studies**

Ecological level	Empirical evidence	Degree of support
Microsystem		
Gender	Amin et al., (2019); Arkowitz et al., (2017); Balconi & Campanella (2021); Christenson & Merritts (2017); Glasner & Drazdowski (2019); Guo (2017); Jewell et al., (2018);	Consistent empirical support
Age	Amin et al., (2019); Arkowitz et al., (2017); Balconi & Campanella (2021); Christenson & Merritts (2017); Glasner & Drazdowski (2019); Guo (2017); Jewell et al., (2018); Lewis (2018); Li (2020); Lin et al., (2019); Miller & Rollnick (2013); Myers et al., (2000); Naar et al., (2023); Naar & Suarez (2021); Prochaska & Prochaska (2019); Ryan (2017); Thombs & Osborn (2019); Burke et al.,(2003); Knight et al., (2005); Zohreh & Ghazal (2018)	Consistent empirical support
Family	Balconi & Campanella (2021); Christenson & Merritts (2017); Glasner & Drazdowski (2019); Guo (2017); Jewell et al., (2018); Lewis (2018); Li (2020); Lin et al., (2019); Miller & Rollnick (2013); Myers et al., (2000); Naar et al., (2023); Naar & Suarez (2021); Prochaska & Prochaska (2019)	Consistent empirical support
Peer	Amin et al., (2019); Arkowitz et al., (2017); Balconi & Campanella (2021); Christenson & Merritts (2017); Glasner & Drazdowski (2019); Guo (2017); Jewell et al., (2018); Lewis (2018); Li (2020); Lin et al., (2019); Miller & Rollnick (2013); Myers et al., (2000); Naar et al., (2023); Naar & Suarez (2021); Prochaska & Prochaska (2019); Ryan (2017); Thombs & Osborn (2019)	Consistent empirical support

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