

## THE EFFECTIVENESS OF MOTIVATIONAL INTERVIEWING TECHNIQUES IN MOTIVATION TO CHANGE AND AMBIVALENCE AMONG YOUNG ADULTS WITH AMPHETAMINE USE DISORDER

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### **Abstract**

*The use of amphetamine disorder in young adults is also linked with low motivation to change and high ambivalence to substance use, which tend to hinder treatment and recovery efforts. Motivational Interviewing (MI) is an evidence-based counselling intervention that is client-focused and aims at improving intrinsic motivation and ambivalence resolution. The Purposive sampling was employed to recruit 30 participants with a clinical diagnosis of amphetamine use disorder who are rehabilitation centers. It was done in a pre-test post test design and a structured MI intervention was given to the subjects through several sessions. Standardized self-report measures were used to measure motivation to change and ambivalence, and the Wilcoxon signed-rank test was used to determine within-group changes. Findings showed that the level of motivation to change changed significantly ( $p < .01$ ) and that the level of ambivalence towards drug use changed significantly ( $p < .01$ ) after the MI intervention. The results of these studies indicate that MI is efficient in boosting the motivation processes and the decrease in the psychological barriers to change in young adults with AUDs using amphetamines (Rasool et al., 2021; Rasool et al., 2022). The research has a practical clinical implication since it has identified MI as a short, affordable, and client-focused intervention that can enhance the engagement of treatment and readiness people to further evidence-based treatments. In spite of the restriction of such elements as small sample size, self-report measures, and absence of long-term follow-up, findings contribute to the empirical evidence of integrating MI into substance use treatment programs. To summarize, Motivational Interviewing shows a great potential to stimulate motivation and decrease ambivalence among young adults with amphetamine use disorder as it can also be used to enhance better therapeutic outcomes and recovery engagement.*

**Keywords:** *Motivational Interviewing, Amphetamine Use Disorder, Motivation to Change, Ambivalence, Young Adults.*

### **Introduction**

The use of amphetamine has become a major mental health and psychosocial issue in the world, especially among youth in adulthood. Young adulthood, the stage usually aged between ages of 18 and 35 is a mark of critical development that is associated with exploration of the identity, high levels of impulsiveness, social experimentation, and susceptibility to peer pressure. Those

dynamics at developmental stages frequently make the person more vulnerable to substance use and restrict the development of adaptive coping and decision-making skills (Arnett, 2018; Majid et al., 2023). Therefore, the current stage of amphetamine consumption continues the absence of abilities to regulate their emotions, cognitive abilities, and social lives, contributing to the self-dependent cycle and strengthening the state of psychological suffering (Ishaq et al., 2025).

Motivational deficits and resistance to behaviour change are crucial psychological obstacles in this regard since the individuals with amphetamine use disorder would be needed to recover. Conventional cognitive-behavioral approaches, though useful in other cases, are otherwise not particularly adequate when it comes to resolving emotional ambivalence and defensive resistance typical of stimulant dependence (Hettema et al., 2020; Atif Rasool et al., 2025). Thus, the empathetic, self-reflexive, and client-centered approaches to therapy that include Motivational Interviewing (MI) have become a center of attention among the treatment models in the addiction counselling domain.

Psychologically, the dependence of amphetamine is not only a physiological one: it is a complex behavioral and emotional disorder determined by the motivation, self-efficiency, ambivalence, and an assumed control over actions (Noor et al., 2025; Saira Majid & Atif Rasool, 2025). The amphetamine user disorder has tendencies to develop extreme internal struggles about using the drug alternating between the urge to quit and the need to do so. This cognitive-emotional ambivalence is a persistent force that leads to denial, returning to treatment, and discommitment to treatment (Heather, 2017; Majid et al., 2023). The specified ambivalence is most common among young adults who might perceive the use of stimulants as a means of improved social performance, improved productivity, or euphoria despite the knowledge of its detrimental effects (Bender et al., 2019; Nayab Islam et al., 2025).

Addition to this fact, the consumption of amphetamines has been associated with structural and functional changes within reward and executive systems of the brain, which result in poor choice processes, inability to exercise restraint and increased impulsivity. These neuropsychological modifications also worsen challenges in maintaining the desire to change, even in those individuals who stating the desire to quit the use of substances (Abdul Aziz et al., 2025; Sana et al., 2025). The subsequent mismatch between desire and action highlights the psychological versatility of substance addiction. It would not be effective to treat those suffering this internal struggle through the traditional directive and patient-focused treatments when handling them through confrontation or outside pressure (Arkowitz and Miller, 2018; Iqbal et al., 2025).

Empirically, it has been argued that utilizing stimulant use disorders tend to be less prepared to change and less able to adhere to the treatment than people in other dependency types of substances (Smedslund et al., 2011). Research also reveals that the rates of relapses among the users of amphetamines are too high, and it is partly because of the variation of the motivational conditions and the absence of any internal factors that way commitment to change of behaviour (Rawson et al., 2017). These results point to the fact that to promote sustainable recovery, it is critical to target the psychological mechanisms in motivation and ambivalence. MI has proven effective in improvements to readiness to change through generation of self-motivational utterances and overcoming cognitive dissonance in regard to substance use (Apodaca & Longabaugh, 2009).

There are other issues of clinical engagement with the young adult population. Amphetamine use disorder is one of the disorders that are ambivalent in young adults, and in many cases, it is committed by perceiving stigma, distrusting authority, and overestimating the ability to control their drug consumption (Dingle et al., 2018). In addition, peer normalization of the use

of stimulants, academic demands, and performance enhancement due to social and cultural issues also lead to abstinence ambivalence (Hohwy et al., 2020). These psychosocial factors overlap with the neurocognitive impairments, and the combination of them forms a chronic motivational imbalance, complicating the process of recovery. Thus, as much as substances use behaviors have to be tackled, the underlying psychological conflict that perpetuates them should also be dealt with.

The consequences of amphetamine dependence are also widely spread in psychology and can complicate the relations of people with each other, their professional activity, and the quality of life as a whole (McKetin et al., 2019). Recurrent utilization is also quite commonly linked to mood dysfunction, psychotic symptoms, anxiety and withdrawal that destroys even more the sense of control he or she has over his/her behaviour. Viability of neurobiology, motivational instability as well as social reinforcement in isolation and in combination generates a vicious cycle of substance use and relapse. Therefore, the psychological aspects of ambivalence and motivation are inevitable to be referred to in the development of treatment.

With these factors in mind, investigating the effectiveness of the Motivational Interviewing on stimulating motivation to change and decreasing ambivalence in the patient with amphetamine use disorder of a young age is theoretically and clinically important. This exploration is consistent with modern addiction psychology, that sees change as a dynamic, self-motivated process as opposed to a linear behavioral change that is brought by external forces (Miller and Rollnick, 2013). Learning about the impact of MI on the underlying psychological processes of change provides a good lesson on how to enhance the processes of participation, compliance, and lasting recovery in this high-risk group.

Motivation to change is personal desire, preparedness and will of the individual towards changing his/her substance use habit to conform to the recovery-oriented objectives (Deci and Ryan, 2000). In this study, operationally, motivation to change will be this level of preparedness and desire among the participants to change their behaviour of taking amphetamines as measured by their aggregate score on the University of Rhode Island Change Assessment Scale (URICA) (McConaughy et al., 1983).

The existence of conflicting attitudes or feeling in regard to substance use and choice to change is known as ambivalence (Miller and Rollnick, 2013). It is an internal condition of indecision, as the person is well aware of the positive aspects of change but still feels the need to be associated with addictive behaviour (Magill et al., 2018).

Motivational Interviewing is based on various psychological theories, particularly, the client-centered therapy developed by Rogers, the self-determination theory (SDT), as well as Transtheoretical Model (TTM). The interpersonal style of MI is grounded on the empathic approach to clients and their unconditional positive regard and reflective hearing that were developed by Carl Rogers (Rogers, 1951). In the SDT aspect, MI will strengthen the autonomy, competence and relatedness, which form the key psychological requirements of self-motivated behaviour (Deci and Ryan, 2000). Besides, the conceptualization of the stages of changes in TTM precontemplation, contemplation, preparation, action, as well as maintenance offer the framework of grasping the preparedness of the clients to change and planning the intervention based on this framework (Prochaska and DiClemente, 1983).

### **Literature Review**

The three-decade of empirical studies have invariably shown that motivational interviewing and its associated interventions would be effective in achieving treatment adherence and behavioral change in people with stimulant use disorders. The international and indigenous literature draw attention to common trends and peculiarities of motivation to change and Amphetamine use disorder in different cultures.

One of the studies revealed that MI sessions were instrumental in enhancing the treatment retention and willingness to change in the first phase of treatment. The participants who were exposed to MI also had a higher probability of completing the programme and were less prone to lapse as opposed to ordinary counselling. Nevertheless, at the 6-month follow-up, the group differences had reduced, which indicates that the main benefit of MI is in precise facilitation of treatment attendance and not long-term abstinence. Weaknesses were a variation in adherence to MI principles by counsellors and a lack of control of interventions. However, this pioneer study has asserted the role of MI in the initial phases of the stimulant treatment (Rawson et al., 2004).

One meta-analysis performed on 72 randomized trials involving MI as a measure of substance use, amphetamine and methamphetamine were assessed. The review discovered that MI had large short-term effects of improving treatment engagement and decreasing substance use in the populations. The authors forged an idea that the possibility of integrating MI with continuous relapse-prevention measures may contribute to the increased duration of the outcomes (VanBuskirk and Wetherell, 2014).

One of the studies examined the British effectiveness of the delivery of MI through telephone as a low-cost outreach to methamphetamine user who do not want to receive face-to-face assistance. The randomized controlled trial took place in New South Wales, Australia and enrolled 189 participants who abused methamphetamine on a weekly basis and had no formal treatment. The MI intervention had resulted in six weeks of 30 minutes over the telephone sessions of reducing the frequency and craving of methamphetamine use, and improving the self-efficacy and intention of reducing the use compared to the control assessment groups. The effects however dwindled by 6 months hence the need to have booster sessions or follow-up activity. The results of the study were that MI is efficient in engaging stimulant users in early harm reduction regardless of their treatment contexts, which proves its accessibility and scaled up (Baker et al., 2015).

A systematic review was carried out using Cochrane through the analysis of 59 studies (out of the 13,000 participants) exploring the effects of MI on substance use. Though numerous studies were targeted at alcohol, some of them involved the use of stimulants. The review highlighted on the cost-effectiveness and the flexibility of MI but established that there was a variation in the results of outcomes across studies due to the differences in implementation fidelity and therapist competence (Smedslund et al., 2011).

One study has applied MI to non-clinical group of youths by assessing the Group Motivational Interviewing (GMI) to Pakistan university students where illicit substance use is self-reported. The researchers conducted the study based on the quasi-experimental pre-post design to provide the evaluation of the potential of the intervention to achieve the purpose of promoting abstinence and improving psychological variables associated with motivation and coping. They were a sample of young adult learners (18-25 years old) volunteers of a structured six-session MI programme at a variety of universities in Punjab. The intervention was based on MI principles that convey empathy, trigger change talk, and reinforce self-efficacy and adjusted to the dynamic of the group context based on the available resources of the academic institution. The respondents were included in reflective exercises and group discussions, and decisional-balance to raise awareness of risks related to substances and inherent motivation to evolve. Results showed statistically significant changes in self-efficacy, coping appraisal, and perceived capability to resist peer influence of the participants as well as self-reported decrease in drug usage frequency and stress. These results indicate that positive effects of short-term, collective based MI interventions could be seen on the early-on substance use histories of young adults in collectivist societies. However, it also shows the flexibility and cultural

acceptability of MI in Pakistani schools, which can be extended to the wider range of stimulant users in these institutions (Shaarif and Jami, 2025).

One of the first applications of systematized Group Motivational Interviewing with Brief Cognitive Behaviour Therapy (GMI-BCBT) was put in place in a study conducted with patients with amphetamine dependence. The research applied a quasi-experimental design, by comparing the results of a treatment group subjected to GMI-BCBT and control group subjected to the normal care in the psychiatric hospitals of the southern region. Around two hundred subjects who were found to be amphetamine-type stimulant dependent were recruited after the detoxification. The GMI element operated on the goal of improving readiness to change, the responsibility of dismantling the ambivalence, and confirmation of commitment declarations previous to the switch over to CBT sessions aimed at identifying relapse triggers and postponements, cognitive distortions, and coping methods.

A qualitative-based evidence of the therapeutic efficacy of MI among inmates with methamphetamine addiction in a prison-based counselling setting. Their case-study design examined the experience of an individual inmate that was receiving MI sessions to help him avoid relapses and reintegration planning. The intervention that was conducted in Prison consisted of multiple one-on-one MI sessions provided by trained counsellors that focused on reflective listening, discovery of ambivalence, and aspect of an elicitation of self-motivational statements. The therapy process empirically took the client through self-exploration of triggers, family and own aims of sobriety on release.

The qualitative data shown that the client became more self-aware about the psychological and social factors that promote relapse, became more confident about the ability to abstain after the release, and learnt specific behavioral coping techniques that she could use to stay abstinent. The value of the study is that it demonstrates cultural and contextual flexibility of MI in correctional facilities existing in Muslim-dominated cultures where the stigma and shame may become barriers to free communication about drug consumption. Nonetheless, it is a single-case qualitative report that cannot be generalized and measures the efficacy. Its empirical weight is also further limited by the lack of standardized assessment instruments, follow-up measures and control comparison. It is, however, useful as an insight into the viability and ethical appropriateness of MI to incarcerated methamphetamine users in Southeast Asia (Ibrahim et al., 2021).

The case being discussed was the intervention of a woman who was doubly dependent on both tobacco and methamphetamine. The counsellor also used an integrated approach of MI + CBT in which he applied three individual sessions focusing on the motivational enhancement and cognitive restructuring. There was use of MI principles of empathic engagement, open-ended questioning, and evocation of change talk during the initial part to develop a sense of trust and extracting reasons to change personal, and CBT skills of managing cravings and relapse prevention. Throughout the sessions, client showed gradual change of outside pressure to internal one, as she has reported that she stopped smoking and reduced the consumption of methamphetamine.

Despite positive results, it is evident that the limitations of the study include the investigative design in terms of using a single case; the study did not incorporate standardized measurement scales of outcomes; and follow-up could not be used to conclude that the intervention was effective. The report however demonstrates the flexibility of MI counselling and the use of motivational and cognitive-behavioral methods to deal with the multifacetedification of poly-substance use that is characteristic of the South-East Asian population (Aziz, 2022).

### Methodology

This study utilize a quasi-experimental pre-test and post-test design. Sample was 30 Participants. Participants were selected through purposive sampling from a rehabilitation center. University of Rhode Island Change Assessment Scale (URICA) Used to assess the motivation of change. Eight group sessions conducted for applying different techniques of motivational interviewing. Data were analyzed using SPSS.

### Results

The chapter gives the statistical results of the research. Wilcoxon Signed-Rank Test was employed in the evaluation of pre-intervention and post-intervention Motivational Interviewing group scores.

**Table 1**

*Descriptive Statistics of Selected Demographic Characteristics (N = 30)*

Variable	Category	f	%
Gender	Male	30	100
Age	19–35 years	30	100
Residence	Urban	18	60
Residence	Rural	12	40
Previous Treatment	Yes	10	33.3
Previous Treatment	No	20	66.7

The group used was a sample of 30 males. The findings suggest that most of the respondents were aged 19 to 35 years and most of them lived in urban areas, which implied that they would be more exposed to environmental risk factors related to the use of stimulants.

**Table 2**

*Reliability Analysis of the Study Variables*

Measures	Items	Cronbach's $\alpha$
Questionnaire	24	.76

**Note.** The alpha of Cronbach is equal to or greater than 0.70, which means that internal consistency will be acceptable.

Cronbach alpha was used to determine the internal consistency of the study questionnaire. These findings suggested that the overall scale had good scale reliability, and the coefficient of Cronbach alpha was equal to or less than .76.

**Table 3**

*Wilcoxon Signed-Rank Test Comparing Pretest and Posttest Scores (N = 30) of Study Variables*

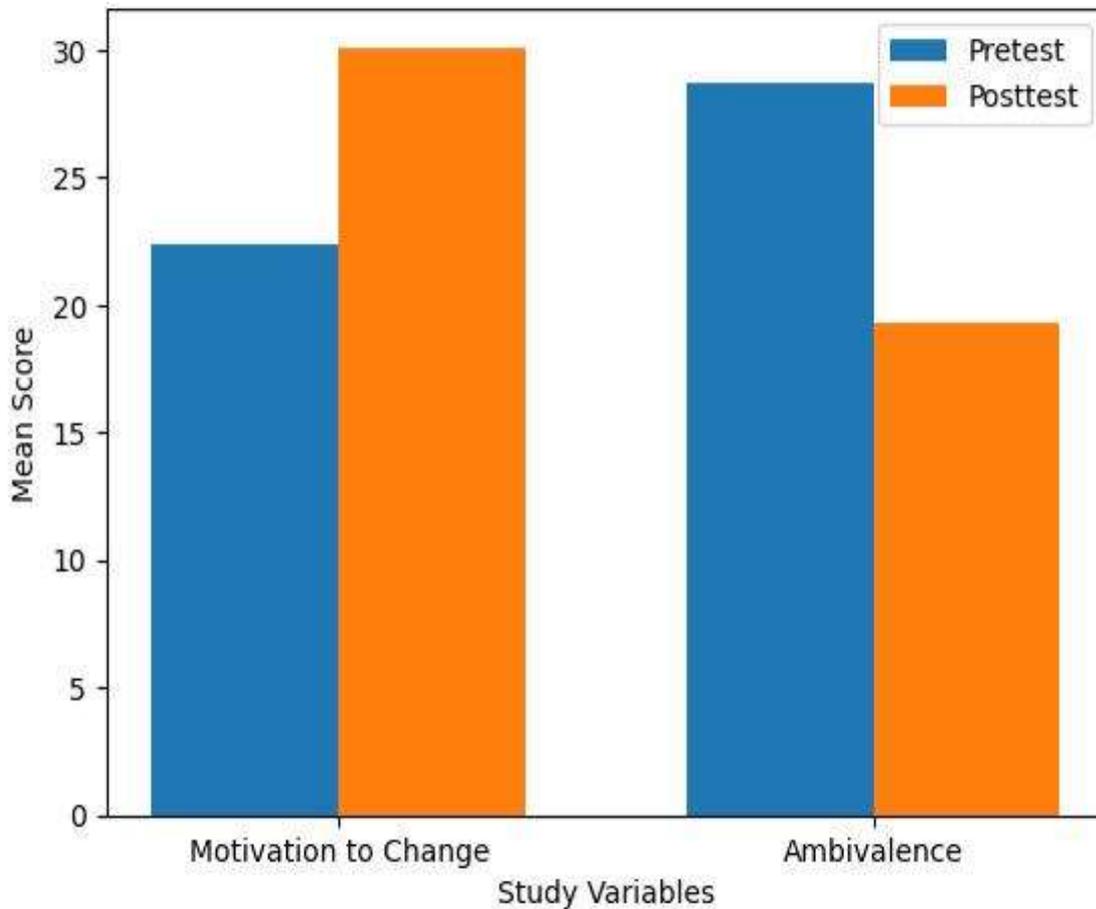
Variables	Pretest (IQR)	Md	Posttest (IQR)	Md	Z	p	r
Motivation to change	22.00 (20–25)	30.00	30.00 (28–32)	28	-4.78	< .001	.62
Ambivalence	29.00 (27–32)	27	19.00 (17–21)	17	-4.65	< .001	.60

**Note.** Md = Median; IQR = Interquartile Range.

The use of a Wilcoxon signed-rank test was used to determine the effectiveness of Motivational Interviewing. The results revealed that the difference between pretest (Md = 22.00) and posttest (Md = 30.00) scores in motivation to change was statistically significant with a Z = -4.78, p = .001. Moreover, the ambivalence also showed statistically significant decrease between pretest (Md = 29.00) and posttest (Md = 19.00), Z = -4.65, p < .001. Such results indicate that Motivational Interviewing was effective in increasing motivation levels and reducing ambivalence in the sample of participants.

**Graph 1**

*Bar Graph Comparing Pretest and Posttest Scores (N = 30) of Study Variable*

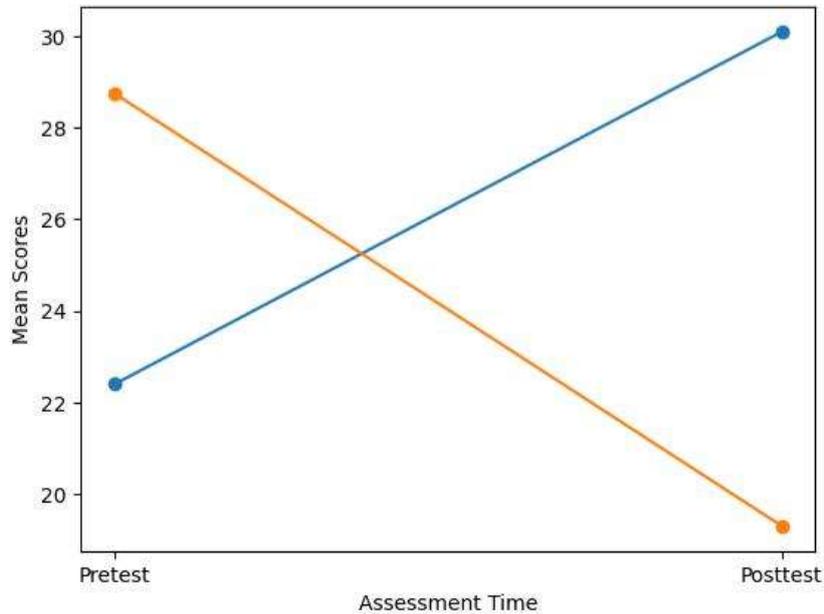


The bar chart represents the comparative analysis of the mean scores (before and after intervention) of Motivation to Change and the variable of Ambivalence after the application of motivational interviewing to the study participants (N = 30).

The bar chart thus confirms motivational interviewing effectiveness as a therapeutic intervention strategy to empower motivation or ambivalence in individuals with substance use problems.

**Graph 2**

*Line Graph Comparing Pretest and Posttest Scores (N = 30) of Study Variables*



The following line graph is used to conduct a comparative evaluation of pre-intervention and post-intervention average scores of motivation to change and ambivalence of the study participants after applying the Motivational Interviewing (MI) treatment (N = 30). The results show a clear positive (upward) trend on motivation to change and negative (downward) trend on ambivalence after the intervention.

**Motivational Interviewing Intervention**

This study concluded that MI is an effective treatment technique that can be used in boosting change motivation and reducing ambivalence in young adults diagnosed with amphetamine use disorder. The results showed that there were statistically significant increase in the change motivation of participants and substantial decrease in ambivalence between post-intervention and pre-intervention evaluation which can be seen through Wilcoxon Signed-Rank Test analysis.

**Discussion**

Amphetamine use and substance use disorder (SUD) is an escalating community issue across the world and in Pakistan. The stimulant use has been on the increase in Pakistan, particularly among young adults over the last ten years with the resultant psychological, social and behavioral problems. Studies in South Asian communities indicate that not only biological vulnerability affects substance use but those sociocultural pressures; stigma, family relationships, and the lack of access to mental health services have a strong impact on substance use (UNODC, 2021; Khalid et al., 2022). The current paper has analyzed psychological and behavioral patterns related to amphetamine users, including demographic variables and how they are related to substance use characteristics. The interpreting of these patterns is crucial to the Pakistani context wherein the social norms, collectivist culture, and addiction stigma play a vital role in treatment seeking behavior and recovery.

The findings of this study showed that Motivational Interviewing (MI) significantly improved change motivation, but reduced ambivalence among youth with amphetamine use disorder. Wilcoxon Signed-Rank Test showed that a statistically significant improvement in change

motivation occurred in the quality of pre-intervention compared with post-intervention measures, which showed that the participants gained more internal commitment and readiness to change their substance consumption habits after MIs treatment. This result corresponds to the theoretical framework of Motivational Interviewing that aims at reinforcing intrinsic motivation through empathetic relations, collaborative cooperation, and ambivalence work-around (Miller and Rollnick, 2023).

In line with this, the results indicated that there was a significant decrease in drug use ambivalence after the Motivational Interviewing intervention. This evidences that MI is effective in helping participants in handling conflicting emotions and internal conflicts related to consumption of substances. One of the main barriers to recovery is ambivalence as people are often motivated and opposed to change simultaneously (Magill et al., 2021).

Substance use is not only seen as a moral flaw but as a mental illness in the Pakistani society, affecting both the levels of shame, guilt, and social rejection of the addicted person. Research done in Pakistan suggests that individuals with SUD often perceive being stigmatized by family and society, making them unwilling to talk about it and participate in treatment services (Ahmed and Iqbal, 2020).

In addition, we can consider the growing popularity of the use of amphetamines among young men in Pakistan, which underlines gender-related trends in substance use behavior. Pakistani culture also permits men to move and be more exposed to the society than women are, making them more susceptible to peer pressure and access to drugs (Ali et al., 2023).

Further, studies have also highlighted that length and frequency of drug consumption have a strong influence on both psychological wellness and rehabilitation. The chronic use of stimulants is linked to cognitive deficits, emotional impairment, and a higher risk of relapses, especially in cases where the people do not have social support and access to professional treatment (Volker et al., 2021).

These results also go hand in hand with the literature suggesting that MI is effective to promote treatment readiness among persons with heterogeneous substance use profiles. Even though some recent reviews of the evidence have found inconsistent impacts of MI on long-term substance use outcomes, they tend to emphasize the facilitative nature of MI in enhancing readiness to change and treatment involvement, especially in the short-term (Cochrane Review, 2022).

### **Practical Implications**

The findings have a number of implications in terms of clinical implications, treatment program and policy implications. To begin with, the high improvement of motivation and decrease of ambivalence after MI indicate that such intervention could become an effective method of entering those clients who otherwise are not ready to involve themselves into the traditional substance use treatment. Training clinicians can enable them to provide MI within a comparatively brief period as compared to longer cognitive-behavioral interventions and thereby make them feasible to be implemented more broadly. MI training can enhance the culture of treatment of multidisciplinary teams. The existing results have policy implications. The policymakers and health planners should consider funding the training of clinicians and counselors in MI techniques since they have proved to be effective and flexible. On institutional level, rehabilitation centers and mental health services can integrate MI into regular intake assessment and use it to encourage the involvement or use it to inform the development of the following treatment plan.

### **Limitations and Suggestions**

First, causal inferences are restricted in single group, pretest- posttest design. Second, the use of self-report measures presents the risk of social desirability and biases in the responses. Third,

even though the current study was used to evaluate short-term psychological outcomes, it lacked the use of long-term follow-ups to determine whether the results can be translated into long-term behavior change. Cross-cultural implementation of MI should be researched further. Even though there is evidence that MI can be useful outside of Western settings (e.g., Iran), further investigation is required to determine culturally specific changes that will maximize the relevance and acceptability of the treatment to a wider range of populations, such as young adults in South Asian settings.

### Conclusion

To conclude, the current research offers empirical insights into the idea that Motivational Interviewing can contribute to improving motivation to change and the decrease in ambivalence toward the use of amphetamines among young people with amphetamine use disorder. Even though larger reviews have not provided consistent results on the effects of MI on substance use outcomes, such results highlight the significant effects of MI on major psychological variables that theoretically predetermine behavioral change. The results justify the role of MI in substance use treatment models as an economical, scalable and client-focused initial intervention, particularly in locations whereby treatment involvement is an issue. Further studies using rigorous design and long-term follow-ups shall clarify even more on the role of MI in the full-scale treatment pathways of substance use disorder.

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