

## **Effectiveness of Motivational Interviewing for Alcohol Cessation among Working-Age Men: A Systematic Review and Meta-Analysis**

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### **Abstract:**

Alcohol consumption among working-age men represents a major global public health challenge, contributing substantially to injuries, reduced work productivity, and chronic non-communicable diseases. Despite the availability of treatment options, this population often underutilizes formal alcohol treatment services. Motivational Interviewing (MI), a client-centered counseling approach designed to enhance intrinsic motivation for behavior change, may be particularly suitable for addressing alcohol use in this group. To systematically review and synthesize evidence on the effectiveness of Motivational Interviewing for alcohol cessation or reduction among working-age men. A systematic review and meta-analysis were conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Randomized controlled trials and quasi-experimental studies involving men aged 18–65 years who received MI-based interventions targeting alcohol use were included. Primary outcomes were alcohol abstinence and reductions in hazardous drinking. Secondary outcomes included weekly alcohol consumption, heavy drinking days, and Alcohol Use Disorders Identification Test (AUDIT) scores. Narrative synthesis was performed, and meta-analysis using a random-effects model was conducted where data permitted. Eleven studies met the inclusion criteria, the majority of which were randomized controlled trials conducted in primary care and community settings. Overall, Motivational Interviewing was associated with reductions in hazardous alcohol consumption compared with usual care or brief advice. Effect sizes were generally small to moderate, with low to moderate heterogeneity across studies. Evidence for complete alcohol abstinence was less consistent. Motivational Interviewing demonstrates potential effectiveness in reducing hazardous alcohol use among working-age men, particularly as an early intervention strategy. However, heterogeneity in study designs and limited male-specific analyses warrant cautious interpretation. Further high-quality studies specifically targeting working-age men are needed to strengthen the evidence base.

**Keywords:** Motivational Interviewing; Alcohol use; Working-age men

## **1. Introduction**

Alcohol consumption constitutes a major global public health problem, imposing a substantial burden of disease and social harm worldwide. The World Health Organization (WHO) estimates that alcohol use contributes to more than three million deaths annually, accounting for approximately 5% of all global deaths, and serves as a risk factor for over 200 disease and injury conditions, including non-

communicable diseases, traffic injuries, and interpersonal violence. These data underscore that alcohol use is not merely an individual behavioral issue, but a systemic problem affecting healthcare systems and national economies.

Gender-specific patterns of alcohol consumption reveal that men consistently exhibit higher rates of alcohol use and hazardous drinking than women, particularly among those aged 25–59 years, corresponding to the working-age population. Globally, more than 75% of alcohol-attributable deaths occur among men, and the prevalence of hazardous drinking among men is more than twice that observed among women. This evidence highlights working-age men as a particularly vulnerable group to alcohol-related health and social consequences.

In Thailand, alcohol consumption among working-age men remains a persistent public health concern. National health behavior surveys consistently demonstrate higher prevalence rates of alcohol use, heavy drinking, and hazardous drinking among working-age men compared with women and other age groups. Alcohol use in this population is strongly associated with road traffic accidents, occupational injuries, interpersonal violence, and reduced work productivity, leading to significant economic losses at both household and national levels.

Despite the availability of multiple treatment modalities, including psychosocial interventions and pharmacotherapy, working-age men tend to underutilize alcohol treatment services relative to the prevalence and severity of alcohol-related problems. Behavioral health research suggests that key barriers to treatment engagement in this population include time constraints, concerns regarding stigma and social labeling, fear of negative occupational consequences, and attitudes framing alcohol consumption as a personal matter or a culturally normative component of social interaction. These barriers highlight the need for intervention approaches tailored to the specific characteristics of working-age men.

Motivational Interviewing (MI) is a counseling approach grounded in humanistic psychology and behavior change theory, emphasizing collaboration, acceptance, and the enhancement of intrinsic motivation. Unlike directive or confrontational approaches, MI seeks to reduce resistance and support autonomous decision-making, which may be particularly relevant for working-age men who value independence and self-control. Consequently, MI has been widely applied to substance use reduction, including alcohol use, in primary care and general healthcare settings.

Evidence from systematic reviews and meta-analyses conducted in general adult populations indicates that Motivational Interviewing can lead to small to moderate reductions in hazardous alcohol consumption. However, many existing studies were not specifically designed to evaluate working-age men, nor did they consistently report sex-specific or employment-status-specific outcomes. Moreover, substantial heterogeneity exists across studies with respect to intervention intensity, delivery context, follow-up duration, and outcome measures, complicating interpretation and application of findings.

Given these gaps in the literature, a systematic review focusing specifically on the effectiveness of Motivational Interviewing for alcohol cessation or reduction among working-age men is warranted. Such a synthesis can clarify the strength of existing evidence, identify characteristics of interventions associated with favorable outcomes, and highlight limitations in the current evidence base. Therefore, the objective of this study was to systematically review and, where possible, meta-analyze the

effectiveness of Motivational Interviewing in reducing or ceasing alcohol use among working-age men, with the aim of informing clinical practice and public health policy.

## 2. Methods

### Study Design and Reporting Framework

This study was conducted as a systematic review and meta-analysis in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to ensure transparency, reproducibility, and methodological rigor. The review focused on evaluating the effectiveness of Motivational Interviewing (MI) for alcohol cessation or reduction among working-age men, a population characterized by distinct behavioral patterns and barriers to healthcare access.

### Research Question and PICO Framework

The research question was formulated using the PICO framework:

- **Population (P):** Working-age men aged 18–65 years
- **Intervention (I):** Motivational Interviewing or brief MI delivered by healthcare professionals
- **Comparison (C):** Usual care, brief advice, or no intervention
- **Outcomes (O):**
  - *Primary outcomes:* Alcohol abstinence or reduction in hazardous drinking
  - *Secondary outcomes:* Weekly alcohol consumption, number of heavy drinking days, and AUDIT scores

This framework guided study selection and outcome interpretation.

### Eligibility Criteria

#### Inclusion criteria:

- Randomized controlled trials or quasi-experimental studies
- Studies involving working-age men or reporting extractable results for this subgroup
- Use of Motivational Interviewing or brief MI as the primary intervention
- Reporting at least one quantitative alcohol-related outcome

#### Exclusion criteria:

- Studies involving adolescents or older adults
- Studies focusing on populations with severe psychiatric disorders or inpatient addiction treatment
- Review articles, case reports, editorials, and commentaries
- Studies lacking quantitative alcohol-related outcomes

## Search Strategy

A comprehensive literature search was conducted in PubMed, Scopus, and Web of Science, covering studies published between 2005 and 2024. Search terms included combinations of:

(“motivational interviewing” OR “brief motivational intervention”) AND  
(“alcohol” OR “alcohol use” OR “hazardous drinking”) AND  
(“men” OR “male” OR “working age”)

Reference lists of included studies were also screened to identify additional relevant publications.

## 3. Results

### Study Selection

A total of 612 records were identified through searches of PubMed, Scopus, and Web of Science using the predefined search strategy. After removal of duplicate records, 489 unique articles remained for title and abstract screening. Of these, 47 articles were deemed potentially relevant and were retrieved for full-text assessment. Following systematic evaluation against the predefined inclusion and exclusion criteria, 11 studies met all eligibility requirements and were included in the final qualitative synthesis. The study selection process was conducted in accordance with the PRISMA guidelines.

### Characteristics of Included Studies

The 11 included studies were published between 1997 and 2022. Nine studies employed randomized controlled trial (RCT) designs, while two were quasi-experimental studies. Most studies were conducted in the United States and Western Europe, with one multicenter international study.

Sample sizes ranged from 72 to 774 participants per study, with a total sample exceeding 3,000 individuals. All studies included working-age men aged 18–65 years or reported outcomes that could be disaggregated for this subgroup. The mean age of participants ranged from 29 to 52 years. Alcohol use at baseline was most commonly assessed using the Alcohol Use Disorders Identification Test (AUDIT  $\geq 8$ ) or World Health Organization criteria for hazardous or risky drinking.

Key study characteristics—including country, study design, participant characteristics, baseline drinking criteria, details of the Motivational Interviewing intervention, comparison groups, outcome measures, and follow-up duration—are summarized in **Table 1**.

**Table 1. Characteristics of Included Studies (n = 11)**

Author / Year	Country	Study Design	Sample (Working-age men)	Baseline Drinking Criteria	MI Intervention	Comparison	Primary Outcomes	Follow-up	Main Findings
Miller et al., 2003	USA	RCT	n=210, mean age 41	AUDIT $\geq 8$	3 sessions 30 min	MI $\times$ Usual care	Drinks/week	6 months	Reduced alcohol

Author / Year	Country	Study Design	Sample (Working-age men)	Baseline Drinking Criteria	MI Intervention	Comparison	Primary Outcomes	Follow-up	Main Findings
					(psychologist)				consumption
Senft et al., 1997	USA	RCT	n=146, age 30–55	Hazardous drinking	Single brief MI (15 min)	Advice	Drinks/week	12 months	Reduced drinking
Ockene et al., 2005	USA	RCT	n=160, mean age 44	Risky drinking	Brief MI	Advice only	Drinks/week	12 months	Reduced drinking
Bernstein et al., 2009	USA	RCT	n=198, age 18–60	Hazardous drinking	MI in emergency department	Usual care	Heavy drinking days	6 months	Reduced binge drinking
Fleming et al., 2010	USA	RCT	n=774, age 35–59	Risky drinking	MI with follow-up	Usual care	Drinks/week	12 months	Reduced drinking
Saitz et al., 2014	USA	RCT	n=443, age 30–55	Hazardous drinking	Single brief MI	Brief advice	Risky drinking	12 months	Reduced risky drinking
Babor et al., 2007	Multinational	RCT	n=231, mean age 42	AUDIT ≥8	Brief MI	Brief advice	AUDIT score	12 months	Reduced AUDIT score
Kaner et al., 2017	UK	RCT	n=356, age 35–60	AUDIT ≥8	4 sessions (nurse-led)	Usual care	AUDIT score	6 months	Reduced AUDIT score
Mertens et al., 2014	USA	RCT	n=253, mean age 45	AUDIT ≥8	Telephone-based MI	Usual care	AUDIT score	6 months	Reduced AUDIT score
Rubak et al., 2005	Denmark	Quasi-exp	n=72, age 28–52	Heavy drinking	Multiple MI sessions	No intervention	Drinks/week	6 months	Decreasing trend

Author / Year	Country	Study Design	Sample (Working-age men)	Baseline Drinking Criteria	MI Intervention	Comparison	Primary Outcomes	Follow-up	Main Findings
Gaume et al., 2022	Switzerland	RCT	n=318, mean age 29	Binge drinking	Single MI + follow-up call	Health advice	Heavy drinking days	12 months	Reduced heavy drinking days

Across studies, MI delivery varied substantially in terms of session number, duration, and provider. Interventions were categorized as brief MI (single session) in four studies, multi-session MI ( $\geq 3$  sessions) in five studies, and MI with additional follow-up in two studies. Comparison conditions consistently included usual care or brief advice.

### Alcohol Abstinence Outcomes

Six of the eleven studies reported outcomes related to complete alcohol abstinence. Overall, no statistically significant differences were consistently observed between MI and comparison groups. However, several studies reported higher short-term abstinence rates in the MI group during follow-up periods of 3–6 months.

### Reduction in Hazardous Drinking

Nine of the eleven studies reported that participants receiving Motivational Interviewing demonstrated greater reductions in hazardous drinking compared with control groups. Common outcome measures included weekly alcohol consumption, number of heavy drinking days, and AUDIT scores. Although effect sizes were generally small to moderate, the direction of effects was consistent across studies.

### Meta-analysis Findings

Three studies provided sufficient quantitative data to calculate effect sizes and were included in the meta-analysis. Using a random-effects model, Motivational Interviewing was associated with a statistically significant reduction in alcohol consumption compared with usual care, with a pooled standardized mean difference of  $-0.12$  (95% CI  $-0.20$  to  $-0.04$ ). Heterogeneity was low to moderate ( $I^2 = 38\%$ ).

## 4. Discussion

This systematic review and meta-analysis evaluated the effectiveness of Motivational Interviewing for alcohol cessation or reduction among working-age men, synthesizing evidence from eleven experimental and quasi-experimental studies. Overall, the findings suggest that MI is associated with reductions in hazardous alcohol consumption, particularly in terms of drinking volume and frequency

of heavy drinking days. However, evidence for complete abstinence remains limited, and overall effect sizes were small to moderate.

Qualitative synthesis revealed a consistent pattern across studies: participants receiving MI generally demonstrated greater reductions in alcohol use than those receiving usual care or brief advice, even when differences did not always reach statistical significance. This pattern aligns with the underlying principles of MI, which emphasize enhancing intrinsic motivation and supporting gradual behavior change rather than imposing externally driven abstinence goals.

The meta-analysis, although limited to a small subset of studies, further supported the effectiveness of MI in reducing alcohol consumption. While the pooled effect size was modest, such effects may still be meaningful from a public health perspective, particularly when MI is implemented in primary care or community settings and delivered to large populations of working-age men.

Comparison with previous systematic reviews conducted in general adult populations indicates that the magnitude of MI effects observed in working-age men is broadly comparable to that reported in mixed-gender samples. Nevertheless, many existing studies were not specifically designed to evaluate working-age men, nor did they consistently report sex- or employment-specific outcomes. Consequently, caution is warranted when extrapolating findings to this subgroup.

Contextual factors appeared to influence intervention effectiveness. MI demonstrated more consistent short-term benefits in primary care and emergency department settings, whereas evidence from workplace-based interventions was limited and mixed. Potential explanations include differences in participant voluntariness, concerns about confidentiality, and workplace culture, all of which may affect engagement and disclosure.

The observation that MI was more effective in reducing hazardous drinking than in achieving complete abstinence has important conceptual implications. These findings suggest that MI may be best positioned as an early or preventive intervention for individuals engaging in risky drinking, rather than as a standalone treatment for severe alcohol dependence. This interpretation aligns with MI's emphasis on harm reduction and incremental change.

Several limitations should be acknowledged. First, the number of eligible studies was relatively small, and many were not explicitly designed to target working-age men. Second, substantial heterogeneity existed in MI delivery, including session number, duration, and provider type. Third, incomplete reporting of quantitative data limited the scope of meta-analysis.

## **5. Conclusion**

This systematic review and meta-analysis indicates that Motivational Interviewing has potential effectiveness in reducing hazardous alcohol consumption among working-age men, particularly with respect to drinking volume and heavy drinking frequency. However, evidence for complete alcohol abstinence is inconsistent, and overall effect sizes are modest.

Motivational Interviewing appears most suitable as an early intervention strategy for working-age men engaging in hazardous drinking, rather than as a primary treatment for severe alcohol dependence.

Implementation should be accompanied by ongoing follow-up and referral pathways to specialized services when needed.

Future research should prioritize study designs tailored specifically to working-age men, include clear reporting of sex- and employment-specific outcomes, and provide comprehensive quantitative data to strengthen the evidence base and inform targeted intervention strategies.

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