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Relaxation techniques in individuals undergoing treatment for alcoholism: Scoping review protocol

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ABSTRACT

Introduction: Although alcohol is a toxic and psychoactive substance, it is considered legal in most countries worldwide. This factor significantly contributes to alcoholism being regarded as a serious public health issue. Therefore, it is essential to develop strategies aimed at complementing and supporting the treatment of individuals undergoing therapy for alcoholism, including relax-

Objectives: To map the existing scientific evidence regarding relaxation techniques (concept) frequently applied to individuals dependent on harmful alcohol use (population) during the treatment phase (context).

Methods: This is a scoping review protocol based on the Joanna Briggs Institute methodology. Searches will be conducted in the following databases: CINAHL Complete (via EBSCO), Medline Complete (via EBSCO), PubMed, and Web of Science. Searches for unpublished studies will be carried out in the ProQuest Dissertation & Theses Citation Index (via Web of Science). All publications in English, Portuguese, and Spanish that meet the eligibility criteria will be considered (implementation of relaxation techniques for individuals aged 18 years or older with alcohol dependence, during treatment). Study selection, data extraction, and synthesis will be conducted by two independent reviewers, with a third reviewer consulted in case of disagreement.

Conclusions: This scoping review aims to map the scientific literature regarding the various relaxation techniques currently available. Based on the findings, the review intends to promote reflection among clinical nurses, nurse managers, and policymakers regarding the potential implementation of intervention programs incorporating relaxation techniques in practice settings, with the aim of supporting and improving health outcomes for individuals undergoing treatment for alcoholism.

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RESUMO

Introdução: Apesar do álcool se apresentar como uma substância tóxica e psicoativa, é considerada lícita na maioria dos países, a nível mundial. Este fator, contribui, em grande medida, para que o alcoolismo seja considerado um grave problema de saúde pública. Desta forma, torna-se essencial o desenvolvimento de estratégias que visem complementar e auxiliar no tratamento de pessoas sob tratamento para o alcoolismo, na qual se incluem as técnicas de relaxamento.

Objetivos: Mapear a evidência científica existente acerca das técnicas de relaxamento (conceito) frequentemente aplicadas às pessoas dependentes do consumo nocivo de álcool (população) em fase de tratamento (contexto).

Metodologia: Protocolo de revisão de escopo proposto pelo Joanna Briggs Institute. Será realizada pesquisa nas seguintes bases de dados: CINAHL Complete (via EBSCO), Medline Complete (via EBSCO), Pubmed e Web of Science. A pesquisa para os estudos não publicados será realizada na ProQuest Dissertation & Theses Citation Index (via Web of Science). Consideram-se para o estudo todas as publicações em Inglês, Português e Espanhol que correspondam aos critérios de elegibilidade (implementação de técnicas de relaxamento a pessoas dependentes do consumo de álcool com idade igual ou superior a 18 anos, em fase de tratamento). A seleção dos estudos, a extração e síntese dos dados será executada por dois revisores independentes, com recurso a um terceiro em caso de discordância.

Conclusões: Com o desenvolvimento desta revisão de escopo pretende-se mapear a literatura científica acerca das diferentes técnicas de relaxamento existentes na literatura. Com base nos resultados encontrados pretende-se promover a reflexão dos enfermeiros da prática clínica, enfermeiros gestores e decisores políticos relativamente à possível implementação de programas de intervenção que contemplem as técnicas de relaxamento nos contextos de prática, com vista a sustentar e promover melhores resultados em saúde nas pessoas sob tratamento para o alcoolismo.

Introduction

Harmful alcohol consumption constitutes one of the main threats to global public health, causing significant impacts on individuals' physical, mental, and social health.1 According to the World Health Organization (WHO), harmful alcohol use was responsible for approximately 2.6 million deaths worldwide in 2019.1,2 Its toxicity, combined with a high potential for causing physical and psychological dependence, leads to direct and indirect consequences that affect individual, family, and community well-being. Harmful alcohol consumption is associated with more than 200 diseases and/or health conditions, including non-communicable diseases (such as cancer, cardiovascular, and liver diseases), communicable diseases (such as human immunodeficiency virus and tuberculosis), maternal and child health issues (notably fetal alcohol spectrum disorders), as well as a high incidence of intentional and unintentional harm, including traffic accidents, violent behaviors, child abuse and neglect, crimes, drownings, suicides, and intoxications.3,4 These impacts represent a significant burden on health systems.

In Portugal, data from the Serviço de Intervenção nos Comportamentos Aditivos e nas Dependências (SICAD) indicate that in 2021, 13,242 individuals received treatment for alcohol use, of whom 4,478 began treatment that same year.⁵ The majority were male, with a high prevalence of individuals aged 50 years or older.⁵ That same year, 39,874 hospital admissions related to alcohol consumption were recorded, along with 2,544 deaths attributed to alcohol-related diseases, including cases of alcohol poisoning and traffic accidents.⁵

The treatment of alcohol dependence mostly involves pharmacological and psychotherapeutic approaches, often integrated into structured detoxification and rehabilitation programs.⁶ However, adherence to these interventions is not always satisfactory, facing several barriers such as social stigma, individual resistance, and difficulties in accessing health services.⁶ Relapses are frequent and often associated with the presence of withdrawal symptoms, anxiety, stress, and other psychosocial factors.⁷ In this context, the WHO recommends the implementation of evidence-based, accessible, and sustainable interventions, as outlined in the *Global Alcohol Action Plan 2022–2030*, which sets, among other goals, the target of empowering at least 50% of countries to offer effective interventions to combat harmful alcohol consumption.⁴

In this regard, relaxation techniques have gained prominence as effective complementary non-pharmacological interventions, especially in the fields of mental health and psychiatry. 8-11 These techniques encompass various modalities, such as breathing training, 12 meditation, 9,13-15 bright light therapy, 16-18 progressive muscle relaxation, 19-21 transcendental meditation, 22 mindfulness, 23-27 music therapy, 28 yoga, 14,24 biofeedback therapy, 29-32 and acupuncture. 33.34 Reported benefits include stress management, 9,12,13 anxiety reduction, 9,13,24-26 improved sleep quality, 35,36 as well as decreased depressive symptoms. 13,15,27

Despite the growing interest in relaxation techniques as therapeutic support in the treatment of alcoholism, the evidence remains scattered and poorly systematized. While there are indications that these techniques may promote more adaptive cognitive, emotional, and behavioral responses by modulating relevant psychological and psychosocial factors, 9,12,13 a systematic identification of the benefits of these interventions in people with alcohol dependence is still lacking. Therefore, the present scoping review is justified, aiming to map the available scientific evidence on relaxation techniques and their respective benefits when applied to adults undergoing treatment for harmful alcohol use.

This scoping review aims to map the current scientific evidence regarding relaxation techniques implemented in people with alcohol use disorder undergoing treatment. Furthermore, it may identify gaps in knowledge and support future research and evidence-based clinical practices.

Accordingly, this review seeks to answer the following research question: What relaxation techniques have been described in literature as being applied to adults undergoing treatment for harmful alcohol use, in various healthcare contexts?

It is worth noting that a preliminary search was conducted in the Open Science Framework (OSF), PROSPERO, and the JBI Database of Systematic Reviews and Implementation Reports to determine whether any scoping reviews on this topic had already been published or were in progress. No such reviews were identified, reinforcing the relevance and originality of this proposal.

This scoping review protocol is registered on the Open Science Framework (OSF) platform under the DOI: 10.17605/OSF.IO/PWJ8H.

Methodology

This scoping review will be conducted following the methodology proposed by the JBI³⁷ and will be reported in accordance with the *Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews* (PRISMA-ScR).³⁸ The aim is to map the existing scientific evidence on relaxation techniques

applied to individuals undergoing treatment for disorders related to harmful alcohol use.

Eligibility Criteria

The eligibility criteria were defined based on the PCC framework (Population, Concept, and Context), as recommended by the JBI methodology.³⁷

Population (P): Adults (≥18 years old) diagnosed with alcohol use disorder or engaged in harmful alcohol consumption

Concept (C): Studies exploring the application of relaxation techniques (e.g., breathing training, meditation, progressive muscle relaxation, mindfulness, yoga, music therapy, biofeedback, acupuncture).

Context (C): Any healthcare setting or therapeutic intervention aimed at treating harmful alcohol use, with no geographic, cultural, or institutional restrictions.

Types of Sources

This scoping review will include qualitative, quantitative, mixed-methods studies, as well as systematic reviews and grey literature that address the application of relaxation techniques in adults undergoing treatment for harmful alcohol consumption.

Qualitative studies with various methodological approaches will be included, such as (but not limited to) phenomenology, grounded theory, ethnography, and qualitative description. Quantitative studies may include randomized controlled trials, non-randomized trials, quasi-experimental studies, and observational studies such as descriptive studies, cohort studies, and prospective or retrospective studies.

Systematic reviews, with or without meta-analyses or meta-syntheses, integrative reviews, and mixed-methods studies will also be included. Grey literature will encompass master's dissertations, doctoral thesis, technical and research reports, opinion pieces, reflective articles, editorials, and narrative texts relevant to the topic.

Studies published in Portuguese, English, or Spanish will be eligible, with no time restrictions. This broad inclusion criterion aims to ensure methodological and contextual diversity, enabling a comprehensive mapping of the available scientific evidence.

Search Strategy

The search strategy aims to locate both published and unpublished studies relevant to the research question. The process will include the following steps:

1. Initial exploratory search: An exploratory search was conducted in the databases CINAHL Complete (via

EBSCO), MEDLINE Complete, PubMed, and Web of Science, to identify preliminary studies on the topic. This phase allowed an analysis of terms used in titles, abstracts, and keywords, with the goal of refining the search strategy to be used in the current protocol, which led to the development of table 1.

Table 1. Keywords and indexing terms used in the initial search.

	Terms	MeSH Descriptores	CINAHL Headings
Population	"Alcoholism" OR "alcohol dependence" OR "alcohol abuse" OR "alcohol addiction	"Alcoholism"	"Alcoholism" OR "alcohol abuse"
Concept	"relaxation therapy" OR "therapeutic relaxation" OR "relaxation techniques" OR "relax*"	"Relaxation therapy"	"Relaxation Techniques"
Context	"Treatment" OR "therapy" OR "rehabilitation" OR "management" OR "recovery"		"Substance use rehabilitation programs" OR "recovery"

2. Development of the final search strategy: Based on the previous analysis, the final search strategy was developed and tailored to each database, incorporating free terms and indexed terms (MeSH and CINAHL Headings), along with Boolean operators. To ensure the methodological robustness of the search strategy (Table 2), it was validated with the support of a librarian specialized in the field. Sources of unpublished literature will also be included. This approach aims to maximize the comprehensiveness of the review by ensuring the retrieval of the most relevant available evidence, regardless of publication type or format.

Table 2. Records of the searches conducted across all databases.

Database	Strategy	Results
CINAHL Complete (EBSCO)	Search: ((TI ("Relaxation Therapy" OR "therapeutic relaxation" OR "relaxation techniques" OR relax*)) OR CINAHL (AB ("Relaxation Therapy" OR "therapeutic relaxation" Complete OR "relaxation techniques" OR relax*)) OR "Relaxation Techniques" OR relax*)) OR "Relaxation Techniques")) AND ((TI ("Alcoholism" OR "alcohol dependence" OR "Alcohol Abuse" OR "Alcohol Addiction")) OR (AB ("Alcoholism" OR "alcohol dependence" OR "Alcohol Abuse" OR "Alcohol Addiction")) OR (MH ("Alcoholism" OR "Alcohol Abuse"))) AND ((TI ("treatment" OR "therapy" OR "rehabilitation" OR "management" OR "recovery")) OR (MH ("treatment" OR "therapy" OR "rehabilitation" OR "management" OR "recovery")) OR (MH ("Substance Use Rehabilitation Programs" OR "Recovery")))	15
Medline Complete (EBSCO)	Search: ((TI ("Relaxation Therapy" OR "therapeutic relaxation" OR "relaxation techniques" OR "relax*")) OR (AB ("Relaxation Therapy" OR "therapeutic relaxation" OR "relaxation techniques" OR "relax*")) OR (MH "Relaxation Therapy")) AND ((TI	157

	("Alcoholism" OR "alcohol dependence" OR "Alcohol Abuse" OR "Alcohol Addiction")) OR (AB ("Alcoholism" OR "alcohol dependence" OR "Alcohol Abuse" OR "Alcohol Addiction")) OR (MH "Alcoholism")) AND ((TI ("treatment"))	
	OR "therapy" OR "rehabilitation" OR "management" OR "recovery")) OR (AB ("treatment" OR "therapy" OR "rehabilitation" OR "management" OR "recovery")))	
PubMed	Search: ((("Relaxation Therapy"[Title/Abstract] OR "therapeutic relaxation"[Title/Abstract] OR "relaxation techniques"[Title/Abstract] OR "relax" [Title/Abstract] OR ("Relaxation Therapy"[MeSH Terms])) AND (("Alcoholism"[Title/Abstract] OR "alcohol dependence"[Title/Abstract] OR "Alcohol Addiction"[Title/Abstract] OR "Alcohol Addiction"[Title/Abstract]) OR ("Alcoholism"[MeSH Terms]))) AND ("treatment" [Title/Abstract] OR "therapy" [Title/Abstract] OR "rehabilitation" [Title/Abstract] OR "management" [Title/Abstract] OR "recovery" [Title/Abstract])	184
Web of Science	Search: TS=("Relaxation Therapy" OR "therapeutic relaxation" OR "relaxation techniques" OR relax*) AND TS=(Alcoholism OR "alcohol dependence" OR "Alcohol Abuse" OR "Alcohol Addiction") AND TS=(treatment OR therapy OR rehabilitation OR management OR recovery)	104
ProQuest Dissertation & Thesis Citation Index (Web of Science)	Search: TS=("Relaxation Therapy" OR "therapeutic Dissertation relaxation" OR "relaxation techniques" OR "relax*") AND TS=("Alcoholism" OR "alcohol dependence" OR "Alcohol Citation Abuse" OR "Alcohol Addiction") AND TS=("treatment" OR "therapy" OR "rehabilitation" OR "management" OR "recovery")	27

Study Selection

The study selection process will be conducted using Rayyan® software, and duplicate records will be identified and removed. The process will be transparent and thoroughly documented to ensure its replicability.

Study selection will occur in three consecutive stages: identification, screening, and final inclusion, in accordance with PRISMA-ScR guidelines.³⁸

Initially, titles, abstracts, and keywords will be screened based on pre-defined eligibility criteria by two independent reviewers. Subsequently, the full texts of potentially relevant studies will be read in full to assess their eligibility.

All screening and selection steps will be carried out independently by two reviewers (AF & CO). In case of disagreement, discrepancies will be resolved with the support of a third reviewer (TX) or by consensus. Study authors may be contacted when necessary to obtain additional information or clarify doubts.

Reasons for the exclusion of full-text studies will be recorded and presented in the review. The entire selection process will be described and summarized using a PRISMA-ScR flow diagram, ensuring methodological rigor and traceability.

Data Extraction and Presentation of Results

Data extraction will be conducted using a standardized tool developed for this purpose, aligned with the objectives of the present review (Table 3). After extraction, a descriptive analysis of the results will be carried out, complemented by tables and/or figures, as appropriate.

Table 3. Keywords and indexing terms used in the initial search.

Article title				
Authors/Year/Country	Name and surname of each author of the study/ Year of publication/ Country of origin of the main author			
Design	Describe the study design reported by the author			
Objectives	Check the relevance of the objectives			
Characteristics of the study population	Describe the age, sex, and other relevant characteristics of the participants			
Context	Indicate the setting where the intervention was implemented			
Data collection methodology used	Specify the tools, instruments or approaches used for data collection (e.g., interviews, questionnaires, physiological measures)			
Type of intervention(s) implemented in the study	Specify which relaxation technique(s) were used (e.g., meditation, breathing exercises, progressive muscle relaxation)			
Outcomes	Describe the main results obtained, of interest in answering the research question			
Impact of the study	Indicate the practical or scientific impact as reported by the authors			
Barriers and limitations	Identify methodological, contextual or other limitations reported in the study			
Suggestions for future research	Indicate the research directions proposed by the authors			
Comments/Remarks	Add any relevant notes, observations or aspects not covered by the previous categories			

Data extraction will be performed independently by three reviewers (AF, TX & CO). Any discrepancies will be resolved by consensus. The extraction tool may be refined during the process, and all modifications will be clearly reported in the review.

Ethical Considerations

As this review does not involve the collection of primary data from human participants, ethical approval is not required. The scoping review relies exclusively on previously published data.

Conclusion

Considering the potential benefits of non-pharmacological interventions for the physical and mental health of individuals with addictive behaviors and alcohol dependence, it is relevant to map, through this scoping review, the relaxation techniques currently described in the literature, their contexts of application, and associated effects.

The results of this review have the potential to map existing scientific evidence on the topic presented, as well as to enhance the development of subsequent systematic reviews. Furthermore, the results can contribute to the planning of evidence-based clinical interventions, as well as to the definition of priorities for professional training and the development of health policies.

The results will be disseminated through publication in scientific journals and presentations at relevant academic or professional events.

Conflict of Interest

The authors declare no financial or institutional relationships that could be considered a conflict of interest in relation to the topic addressed. This study did not receive financial support from public or private entities. The authors declare no conflict of interest.

References

- World Health Organization. WHO Technical Manual on Alcohol Tax Policy and Administration. [Geneva]: World Health Organization; 2023. Available at: https://iris.who.int/bitstream/handle/10665/374284/97892400 82793-eng.pdf?sequence=1, Accessed August 25, 2025
- World Health Organization. Organización Panamericana de la Salud/Temas/alcohol. [Washington, DC]: World Health Organization; 2022. Available at: https://www.paho.org/es/temas/alcohol, Accessed August 25, 2025
- World Health Organization. Global report on the use of alcohol taxes 2023. [Geneva]: World Health Organization; 2023.
 Available at:
 - https://iris.who.int/bitstream/handle/10665/374614/97892400 86104-eng.pdf?sequence=1, Accessed August 25, 2025
- 4. World Health Organization. *Plano de Ação Global sobre o álcool* 2022 2030. [Geneva]: World Health Organization; 2022. Available at:
 - https://iris.who.int/bitstream/handle/10665/376939/97892400 90101-eng.pdf?sequence=1, Accessed August 25, 2025
- 5. Serviço de Intervenção nos Comportamentos Aditivos e nas Dependências (SICAD). Sinopse Estatística 2021 Álcool. [Lisboa]: Serviço de Intervenção nos Comportamentos Aditivos e nas Dependências; 2021. Available at: https://sicad.pt/BK/EstatisticaInvestigacao/Documents/2022/Si nopseEstatistica21_Alcool_PT.pdf, Accessed August 25, 2025.

- Wolfe DM, Hutton B, Corace K, et al. Service-level barriers to and facilitators of accessibility to treatment for problematic alcohol use: a scoping review. *Frontiers in Public Health*. 2023;11. doi:10.3389/fpubh.2023.1296239
- Shanmugam B, Das B, Bhattacharjee D, Ezhumalai S. Expressed Emotions and Coping among Relapsed Persons with Alcohol Dependence Syndrome: A Comparative Study. *Indian journal of mental health*. 2021;8(4):429–434.
- 8. Lenze EJ, Voegtle M, Miller JP, et al. Effects of Mindfulness Training and Exercise on Cognitive Function in Older Adults: A Randomized Clinical Trial. *JAMA*. 2022;328(22):2218–2229. doi:10.1001/jama.2022.21680
- Owens M, Bunce HLI. Nature-Based Meditation, Rumination and Mental Wellbeing. *International journal of environmental* research and public health. 2022;19(15):9118. doi:10.3390/ijerph19159118
- Payne RA. Técnicas de Relaxamento Um Guia Prático para Profisisonais e Saúde. Lusociência; 2009.
- Townsend M, Morgan KI. Enfermagem Psiquiátrica: conceitos de cuidados na prática baseada na evidência (9ª ed.). Elsevier; 2021.
- Yadav P, Chatterjee K, Prakash J, Salhotra N, Chauhan VS, Srivastava K. Impact of breathing and relaxation training (Sudarshan Kriya) on cases of alcohol dependence syndrome. *Industrial Psychiatry Journal*. 2021;30(2):341–345. doi:10.4103/ipj.ipj_117_21
- 13. Álvarez-Pérez Y, Rivero-Santana A, Perestelo-Pérez L, et al. Effectiveness of Mantra-Based Meditation on Mental Health: A Systematic Review and Meta-Analysis. Int J Environ Res Public Health. 2022;19(6):3380. doi:10.3390/ijerph19063380
- Reddy S, Dick A M, Gerber MR, Mitchell K. The effect of a yoga intervention on alcohol and drug abuse risk in veteran and civilian women with posttraumatic stress disorder. *J Altern Complement Med.* 2014;20(10):750–756. doi:10.1089/acm.2014.0014
- 15. Rohsenow DJ, Smith RE, Johnson S. Stress management training as a prevention program for heavy social drinkers: Cognitions, affect, drinking, and individual differences. *Addictive Behaviors*. 1985;10(1):45–54. doi:10.1016/0306-4603(85)90052-8
- 16. Menegaz de Almeida A, Aquino de Moraes FC, Cavalcanti Souza ME, et al. Bright Light Therapy for Nonseasonal Depressive Disorders: A Systematic Review and Meta-Analysis. *JAMA Psychiatry*. 2025;82(1):38–46. doi:10.1001/jamapsychiatry.2024.2871
- 17. Uphoff E, Robertson L, Cabieses B, et al. An overview of systematic reviews on mental health promotion, prevention, and treatment of common mental disorders for refugees, asylum seekers, and internally displaced persons. *The Cochrane* database of systematic reviews. 2020:9(9):CD013458. doi:10.1002/14651858.CD013458.pub2
- Reis DJ, Hoffberg AS, Stearns-Yoder KA, Bahraini NH. Bright light therapy for mental and behavioral illness: A systematic umbrella review. *Chronobiology international*. 2023;40(2):204– 214. doi:10.1080/07420528.2022.2140669
- 19. Nardi WR, Kelly P, Roy A, Becker S, Brewer J, Sun, S. A systematic review and meta-analysis of psychosocial interventions for persons with comorbid anxiety and substance use disorders. *Journal of substance use and addiction treatment*. 2024;165:209442. doi:10.1016/j.josat.2024.209442
- 20. Montero-Marin J, Garcia-Campayo J, López-Montoyo A, Zabaleta-Del-Olmo E, Cuijpers P. Is cognitive-behavioural therapy more effective than relaxation therapy in the treatment of

- anxiety disorders? A meta-analysis. *Psychological medicine*. 2018;48(9):1427–1436. doi:10.1017/S0033291717003099
- Maritescu A, Pescaru CC, Crisan AF, Stoicescu ER, Oancea C, Iacob D. The Effects of Progressive Muscle Relaxation on Mental Health and Sleep Quality in Adults with Cystic Fibrosis: A Randomized Controlled Trial. *Journal of clinical medicine*. 2025;14(8):2807. doi:10.3390/jcm14082807
- 22. Gryczynski J, Schwartz RP, Fishman MJ, et al. Integration of Transcendental Meditation® (TM) into alcohol use disorder (AUD) treatment. *J Subst Abuse Treat*. 2018;87:23–30. doi:10.1016/j.jsat.2018.01.009
- 23. Adams CE, Cano MA, Heppner WL, et al. Testing a Moderated Mediation Model of Mindfulness, Psychosocial Stress, and Alcohol Use among African American Smokers. *Mindfulness*. 2015;6(2):315–325. doi:10.1007/s12671-013-0263-1
- 24. Hilcove K, Marceau C, Thekdi P, Larkey L, Brewer MA, Jones K. Holistic Nursing in Practice: Mindfulness-Based Yoga as an Intervention to Manage Stress and Burnout. *Journal of holistic nursing official journal of the American Holistic Nurses' Association*. 2021;39(1):29–42. doi:10.1177/0898010120921587
- 25. Jones KO, Lopes S, Chen L, et al. Perceptions about mindfulness-based interventions among individuals recovering from opioid and alcohol use disorders: Findings from focus groups. Complementary *Therapies in Medicine*. 2019;46:131–135. doi:10.1016/j.ctim.2019.07.013
- 26. Tsui MCF, To JCN, Lee ATC. Mindfulness Meditation, Mental Health, and Health-Related Quality of Life in Chinese Buddhist Monastics. East Asian archives of psychiatry: official journal of the Hong Kong College of Psychiatrists. 2020;30(3):67–72. doi:10.12809/eaap1949
- Davis JP, Berry D, Dumas TM, et al. Substance use outcomes for mindfulness based relapse prevention are partially mediated by reductions in stress: Results from a randomized trial. *Journal of* substance abuse treatment. 2018;91:37–48. doi:10.1016/j.jsat.2018.05.002
- Huang Y, Chen X. Efficacy of Group Music Therapy Based on Emotion- Regulation Skills on Male Inpatients With Alcohol Dependence: A Randomized, Controlled Pilot Trial. Frontiers in Psychology. 2021;12:697617. doi:10.3389/fpsyg.2021.697617
- Schmidt K, Schlicht M, Deutschendorf L, Smets L, Bäuerle A, Teufel M. Biofeedback Training in Inpatient Mental Health Facilities: A Scoping Review. *Journal of clinical medicine*. 2025;14(10):3491. doi:10.3390/jcm14103491
- 30. Alneyadi M, Drissi N, Almeqbaali M, Ouhbi S. Biofeedback-Based Connected Mental Health Interventions for Anxiety: Systematic Literature Review. *JMIR mHealth and uHealth*. 2021;9(4):e26038. doi:10.2196/26038
- 31. Page RD, Schaub LH. EMG biofeedback applicability for differing personality types. *Journal of Clinical Psychology*. 1978;34(4):1014–1020. doi:10.1002/1097-4679(197810)34:4<1014::aid-jclp2270340441>3.0.co;2-r
- 32. Wang L, Liu R, Wang Y, et al. Effectiveness of a Biofeedback Intervention Targeting Mental and Physical Health Among College Students Through Speech and Physiology as Biomarkers Using Machine Learning: A Randomized Controlled Trial.

 Applied psychophysiology and biofeedback. 2024;49(1):71–83. doi:10.1007/s10484-023-09612-3
- 33. Chen P, Li J, Han X, et al. Acupuncture for alcohol use disorder. Int J Physiol Pathophysiol Pharmacol. 2018;10(1):60–69.
- 34. Li Z, Feng J, Yin S, et al. Effects of acupuncture on mental health of migraine patients: a systematic review and meta-analysis. BMC

- $complementary\ medicine\ and\ therapies.\ 2023;23(1):278.$ doi:10.1186/s12906-023-04103-8
- 35. Edinger JD, Arnedt JT, Bertisch SM, et al. Behavioral and psychological treatments for chronic insomnia disorder in adults: an American Academy of Sleep Medicine systematic review, meta-analysis, and GRADE assessment. Journal of clinical sleep medicine. JCSM: official publication of the American Academy of Sleep Medicine. 2021;17(2):263–298. doi:10.5664/jcsm.8988
- 36. Angarita GA, Emadi N, Hodges S, Morgan PT. Sleep abnormalities associated with alcohol, cannabis, cocaine, and
- opiate use: a comprehensive review. *Addiction science & clinical practice*. 2016;11(1):9. doi:10.1186/s13722-016-0056-7
- Peters MDJ, Godfrey C, McInerney P, Munn Z, Tricco AC, Khalil H. Chapter 11: Scoping Reviews (2020 version). In: Aromataris E, Munn Z (Editors). *JBI Manual for Evidence Synthesis* JBI; 2020. doi:10.46658/JBIMES-20-12
- 38. Tricco A, Lillie E, Zarin W, et al. Appendix 11.2 PRISMA ScR Extension Fillable Checklist—JBI Manual for Evidence Synthesis; 2018.