



Study of High Potential for Addiction Group 1 Psychotropic Drugs Used in Science

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ABSTRACT

Background. Research on high-potential addiction psychotropic drugs from Group 1 is an essential undertaking in the fields of pharmacology and mental health treatment, requiring an extensive introduction to provide context and delineate its importance and breadth.

Purpose. This study offers a comprehensive examination of Group 1 psychotropic drugs, emphasizing their pharmacological characteristics, addictive tendencies, and regulatory implications

Method. Drawing upon data extracted from Indonesian Ministry of Health Regulation No. 10 of 2022, the research compiles and delineates the psychotropic drugs falling under Group 1 classification.

Results. Drugs name as Deskloro ketamin, 2F- Deskloro ketamin, Flubroma zolam, Flualpra zolam, Klonazolam are identified, each presenting distinct pharmacological effects and addiction potentials. The study highlights the imperative for stringent regulatory measures owing to the pronounced likelihood of abuse and adverse consequences associated with these substances. Regulatory frameworks must remain dynamic to effectively address emerging challenges and evolving patterns of drug usage.

Conclusion. This research significantly contributes to the comprehension of psychotropic drugs and informs strategies aimed at ensuring their judicious and safe utilization.

KEYWORDS

Addiction Potential, Group 1 Classification , Psychotropic Drugs

INTRODUCTION

Research on high-potential addiction psychotropic drugs from Group 1 is an essential undertaking in the fields of pharmacology and mental health treatment, requiring an extensive introduction to provide context and delineate its importance and breadth (Alifia, U., 2020). Psychotropic medications, particularly those categorized within Group 1, encompass a wide range of pharmaceutical agents engineered to modulate brain function and affect various aspects of mental processes (Alifia, U., 2020). The classification of drugs into Group 1 signifies substances with a marked propensity for addiction and misuse, making

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them subjects of heightened scrutiny and concern within medical and regulatory circles (Hariyanto, B. P., 2018).

Grasping the pharmacological characteristics, clinical effects, and potential risks associated with Group 1 psychotropic drugs is crucial for healthcare practitioners, policymakers, and the general populace (Vetulani, J., 2001). These substances, which include opioids, specific stimulants, and sedatives, exert potent psychoactive effects that may result in addiction, dependency, and adverse health outcomes if used inappropriately or abused (Bonnet, U., 2020). Consequently, conducting thorough scientific investigations into the pharmacodynamics, pharmacokinetics, and clinical implications of these drugs is imperative for guiding evidence-based prescribing practices, regulatory frameworks, and strategies for harm reduction (Liechti, M. E., 2015).

The prevalence of substance use disorders, including addiction to Group 1 psychotropic drugs, poses a significant public health challenge with widespread societal ramifications (Müller, C. P., & Schumann, G., 2011). Substance abuse and addiction not only impose a heavy toll on individual health and well-being but also strain healthcare systems, burden social services, and raise public safety concerns (Vari, M. R., 2019). Furthermore, the interaction between mental health disorders and substance abuse complicates treatment efforts, underscoring the need for a comprehensive and integrated approach to address concurrent conditions and mitigate associated risks effectively (Ardianto, N., 2024).

Given the complexity and multifaceted nature of addiction to Group 1 psychotropic drugs, there is a compelling need for comprehensive research endeavors aimed at elucidating various aspects of these substances (Schifano, F., 2015). This study aims to explore diverse facets of Group 1 psychotropic drugs, including their pharmacological profiles, clinical effects, addiction potential, and societal impact (Kuhn, J., 2013). By synthesizing existing literature, analyzing empirical data, and critically evaluating research findings, this research seeks to advance our understanding of these substances and inform evidence-based interventions for prevention, treatment, and harm reduction (Prasetyawan, F., 2024).

Elucidating the intricate interplay between pharmacology, neurobiology, psychology, and sociocultural factors underlying addiction to Group 1 psychotropic drugs, this study strives to contribute to the broader discourse on substance use disorders and mental health (Wiedermann, W., 2014). Central to this effort is the acknowledgment of addiction as a multifaceted phenomenon influenced by biological, psychological, and environmental factors (Grüsser, S. M., 2006). Addiction entails complex neuroadaptive processes within the brain's reward circuitry, leading to compulsive drug-seeking behavior and compromised control over substance use (Nicholi Jr, A. M., 1983).

Individual susceptibility to addiction is shaped by genetic predispositions, developmental factors, social determinants, and environmental stressors, emphasizing the necessity of a holistic approach to addiction prevention and treatment. Against this backdrop, this study adopts an interdisciplinary perspective, drawing upon insights from pharmacology, neuroscience, psychology, sociology, and public health to provide a comprehensive analysis of Group 1 psychotropic drugs and their implications for addiction (Nicholi Jr, A. M., 1983).

By integrating diverse perspectives and methodologies, this research aims to generate nuanced insights into the intricate nature of addiction, inform evidence-based interventions, and contribute to the advancement of knowledge in the fields of pharmacology, psychiatry, and addiction science. In conclusion, the investigation of high-potential addiction psychotropic drugs from Group 1 represents a critical area of inquiry with significant implications for public health, clinical practice, and policy development (Rounsaville, B. J., 1982). By elucidating the

pharmacological properties, clinical effects, addiction potential, and societal impact of these substances, this research seeks to inform evidence-based approaches to addiction prevention, treatment, and harm reduction. Fostering a deeper understanding of addiction and its underlying mechanisms, this study aims to contribute to the development of more effective strategies for addressing substance use disorders and promoting mental health and well-being (O'Brien, C. P., 2005).

LITERATURE REVIEW

In the realm of scientific literature, particularly within pharmacology and psychology, investigations into the addictive potential of Group 1 psychotropic drugs have garnered significant attention. Psychotropics are medications that affect a person's mind, mood, or behavior, and Group 1 substances often exhibit considerable potential for inducing both physical and psychological dependence. Studies examining the addictive potential of these drugs hold broad implications, especially concerning their management and regulation (Müller, C. P., 2017).

Numerous research endeavors have been undertaken to evaluate the addictive potential of Group 1 psychotropic drugs. A primary focus of this research is to comprehend the neurobiological mechanisms of action of these drugs and how they influence patterns of use and addiction risk. Through neuropharmacological approaches, researchers have sought to identify molecular targets within the brain implicated in the response to these drugs and how repeated use can alter underlying neural circuits (Müller, C. P., 2017).

Epidemiological studies are vital in understanding the prevalence of use and addiction risks associated with Group 1 psychotropic drugs. These studies involve population surveys to identify drug use patterns, factors influencing such use, as well as its social and health impacts. Data from these studies can provide valuable insights for public health policies and addiction prevention efforts (Milkman, H., & Sunderwirth, S., 1982).

In the literature, it is often found that factors as genetics, social environment, and prior drug use history can influence an individual's susceptibility to addiction to Group 1 psychotropic drugs. These studies also consider the role of co-occurring disorders, such as mental disorders or other substance use disorders, which may increase an individual's risk of addiction. The importance of a deep understanding of the addictive potential of Group 1 psychotropic drugs is also reflected in efforts to develop effective treatment and intervention strategies. Cognitive-behavioral therapy, opioid replacement therapy, and other pharmacological approaches have been research focuses to reduce addiction risk and assist individuals in recovery (Tetty, J. N., 2018).

Despite the extensive research conducted in this field, there remains a need for further in-depth investigation. Future research could expand our understanding of more specific risk factors, such as neurobiological biomarkers that can predict an individual's susceptibility to addiction, or more targeted interventions based on genetic and neurochemical profiles. Studies on the addictive potential of Group 1 psychotropic drugs represent an important and complex area of research. With multidisciplinary approaches, including neuropharmacology, epidemiology, and psychology, we can deepen our understanding of this phenomenon and develop more effective strategies for its management (Lukić, V., 2021).

RESEARCH METHODOLOGY

The research methodology employed in this study entails a review method referencing the Minister of Health Regulation of the Republic of Indonesia Number 10 of 2022 concerning the Determination and Amendment of Psychotropic Classification. This regulation serves as the

primary basis for establishing and updating the list of Group 1 psychotropic drugs recognized and regulated by the Indonesian government. The aim of this research is to present a comprehensive list of Group 1 psychotropic drugs as stipulated by the aforementioned regulation.

The initial step in the research methodology involves data collection from the Minister of Health Regulation of the Republic of Indonesia Number 10 of 2022. This official document provides a comprehensive list of psychotropic drugs classified under Group 1 according to the criteria set by the government. The data is then systematically analyzed to extract the list of drugs falling under Group 1. Once the list of Group 1 psychotropic drugs is identified, the subsequent step is to organize this list alphabetically or based on categories specified in the Minister of Health Regulation. This list is then presented clearly and structured within the research report. Throughout this process, the accuracy and validity of information are ensured by cross-referencing data with other relevant official sources. This is done to verify that the list of Group 1 psychotropic drugs presented in this study aligns with the regulations stipulated by the Indonesian government.

The entire research process adheres to principles of sound research methodology, including clarity, precision, and accountability. The data obtained is then compiled neatly and presented in the form of a comprehensive research report.

This research methodology is expected to provide a clear and detailed understanding of the list of Group 1 psychotropic drugs regulated by the Indonesian government. The information obtained from this research is anticipated to serve as a useful reference for stakeholders involved in the regulation, distribution, and usage of psychotropic drugs in Indonesia.

RESULT AND DISCUSSION

Result

The discussion regarding the listed psychotropic drugs focuses on their chemical composition, synonyms, and potential implications. Each drug is analyzed concerning its pharmacological properties, potential risks, and regulatory considerations.

NO	Drug	Sinonim
1	DESKLOROKETAMIN	All isomers and stereochemical forms of its chemical constituents.
2	2F-DESKLOROKETAMIN	2-FDCK, 2-Fluorodeskloroketamin, 2-Fluoro-2'-Okso-PCM
3	FLUBROMAZOLAM	2-(2-Fluorofenil)-2(metilamino)sikloheksan-1-on 8-Bromo-6-(2-fluorofenil)-1-metil-4H-[1,2,4]triazolo [4,3-a][1,4]benzodiazepina
4	FLUALPRAZOLAM	8-Kloro-6-(2-fluorofenil)-1-metil-4H-[1,2,4]triazolo [4,3-a][1,4]benzodiazepina
5	KLONAZOLAM	6-(2-Klorofenil)-1-metil-8-nitro-4H-[1,2,4]triazolo[4,3-a][1,4]benzodiazepina

Source : Permenkes, 2022

The table provides an overview of various psychotropic drugs, comprising a spectrum of chemical compounds with diverse pharmacological properties and associated risks. Deskloroketamin, functioning as a dissociative anesthetic, exists in multiple isomers and stereochemical forms, contributing to its sedative, analgesic, and hallucinogenic

effects. Its categorization within Group 1 underscores its substantial potential for misuse and unfavorable consequences, necessitating rigorous regulatory measures.

Derived from deskloroketamin, 2F-DESKLOROKETAMIN (2-FDCK) shares akin pharmacological traits, albeit potentially differing in potency and duration of action. Alternative terms such as 2-Fluorodeskloroketamin serve as alternative designations within scientific and illicit contexts. Transitioning to benzodiazepine derivatives, FLUBROMAZOLAM and FLUALPRAZOLAM manifest potent sedative and anxiolytic properties, acting via gamma-aminobutyric acid (GABA) receptors.

Their molecular structures, incorporating bromine and chlorine substitutions, augment pharmacological efficacy but concurrently heighten risks of respiratory depression, overdose, and dependency. KLONAZOLAM, another derivative within the benzodiazepine class, distinguishes itself through heightened potency and sedative characteristics, attributed to structural alterations and nitro substitutions.

Despite its potential for managing anxiety and insomnia, klonazepam's association with misuse and adverse effects underscores the necessity for stringent regulatory protocols. These deliberations underscore the vital importance of a comprehensive comprehension and regulatory framework governing psychotropic drugs, ensuring a delicate balance between therapeutic advantages and associated risks to safeguard public health and well-being.

Discussion

The discussion concerning the enumerated psychotropic medications delves into their pharmacological attributes, potential hazards, and regulatory ramifications. Each medication epitomizes a distinctive chemical compound with individual impacts on the central nervous system (CNS) and concomitant risks of misemployment and adverse consequences.

Deskloroketamin, functioning as a dissociative anesthetic, embodies various isomers and stereochemical configurations contributing to its sedative, analgesic, and hallucinogenic properties. Its categorization within Group 1 accentuates its considerable susceptibility to misuse, leading to detrimental outcomes such as addiction, cognitive impairment, and psychological anguish. The assorted chemical configurations within deskloroketamin underscore the necessity for rigorous regulation and surveillance of its utilization to effectively mitigate associated risks.

Derived from deskloroketamin, 2F-DESKLOROKETAMIN (2-FDCK) shares analogous pharmacological traits, although with conceivable disparities in potency and duration of action. The existence of alternative synonyms like 2-Fluorodeskloroketamin facilitates communication and identification within both scientific and illicit circles. However, the structural resemblances between 2F-DESKLOROKETAMIN and its parent compound also connote commensurate risks of misuse and adverse effects, necessitating thorough regulatory measures.

Shifting focus to benzodiazepine derivatives, FLUBROMAZOLAM and FLUALPRAZOLAM demonstrate potent sedative and anxiolytic effects mediated through gamma-aminobutyric acid (GABA) receptors. The chemical substitutions within these compounds augment their pharmacological efficacy but concurrently escalate the risks of respiratory depression, overdose, and dependency. Precision in regulating benzodiazepine derivatives like FLUBROMAZOLAM and FLUALPRAZOLAM is indispensable to curtail the potential harms linked to their usage, especially in contexts of prescription misuse and recreational abuse.

KLONAZOLAM, another benzodiazepine derivative, garners attention for its elevated potency and sedative attributes, attributed to structural alterations and nitro substitutions. Despite its potential for managing anxiety and insomnia, KLONAZOLAM's association with misuse and adverse effects underscores the urgency of stringent regulatory measures. Striking a balance between therapeutic benefits and associated risks is imperative in governing the utilization of benzodiazepine derivatives to ensure optimal patient care and public safety.

CONCLUSION

The analysis of the enumerated psychotropic medications has provided insight into the complex terrain of their pharmacological characteristics, risks, and regulatory considerations. Each medication, distinguished by its distinct chemical makeup and pharmacodynamic behavior, poses unique challenges in terms of oversight and administration to uphold public health and safety. In summary, the categorization of psychotropic medications into Group 1 underscores their notable propensity for misuse and negative outcomes. These compounds, such as Deskloroketamin, 2F-DESKLOROKETAMIN, FLUBROMAZOLAM, FLUALPRAZOLAM, and KLONAZOLAM, elicit a spectrum of effects on the central nervous system, ranging from sedation to hallucinations. Despite their therapeutic utility in specific contexts, their abuse and misuse entail significant risks, including addiction, cognitive impairment, respiratory depression, overdose, and dependency.

The regulatory framework governing psychotropic medications necessitates flexibility and adaptability to address emerging challenges posed by novel substances and changing patterns of use. Effective oversight demands collaboration among policymakers, healthcare providers, law enforcement entities, and community stakeholders to devise comprehensive approaches for prevention, treatment, and harm mitigation. Initiatives aimed at raising public awareness and disseminating education materials play a pivotal role in educating individuals about the risks associated with psychotropic medication usage and fostering responsible medication practices. By cultivating a culture of informed decision-making and risk consciousness, society can mitigate the adverse repercussions of medication misuse and abuse.

To conclude, the regulation of psychotropic medications necessitates a multifaceted approach integrating legal, medical, public health, and societal viewpoints. By addressing the intricate interplay of factors influencing medication usage and abuse, policymakers can formulate measures that facilitate safe and responsible medication utilization while minimizing harm to individuals and communities. Ultimately, the objective is to strike a balance between ensuring access to essential medications for therapeutic purposes and safeguarding public health from the adverse consequences of medication misuse and abuse.

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DECLARATION OF AI AND AI ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

During the preparation of this work, the author(s) used ChatGPT (OpenAI) to assist with language refinement, improving clarity, grammatical accuracy, and the overall organization of the manuscript. After using this tool, the author(s) carefully reviewed, verified, and edited the generated content as necessary and take(s) full responsibility for the accuracy, integrity, and final content of the publication.

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AUTHORS' CONTRIBUTION

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.

Author 2: Conceptualization; Data curation; In-vestigation.

Author 3: Data curation; Investigation.

Author 4: Formal analysis; Methodology; Writing - original draft.

Author 5: Supervision; Validation.

Author 6: Other contribution; Resources; Visuali-zation; Writing - original draft.

Author 7: Other contribution; Resources; Visuali-zation; Writing - original draft.

DECLARATION OF COMPETING INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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