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Digital Drugs: From the Illusion of Relaxation to the Risks of Electronic Addiction— A Sociological Approach to Prevention in Algerian Society

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Abstract

This paper addresses the phenomenon of “digital drugs” as an emerging pattern of addiction through the Internet, also known as digital or electronic addiction. Although this phenomenon appears recent in its spread, it is rooted in ancient sound techniques. It manifests in an individual’s addiction to specific audio tones that flow into the ear, reach the brain, and affect its natural frequencies. This technique relies on what is known as “binaural beats,” providing users with a real or illusory sense of comfort and relaxation, closely resembling the effects of natural drugs. It is worth noting that opinions differ regarding the actual impact of these digital drugs, ranging from complete denial by some researchers to confirmation by others of their serious harm to both the mental and physical health of the individual. Accordingly, scientific research remains open to uncovering further secrets concerning the mechanism of this phenomenon and its harms through specialized field studies. Ultimately, prevention is better than a thousand cures, through raising awareness of its dangers and preventing adolescents and young people from experimenting with it, whatever the justifications.

Keywords: *digital drugs; electronic addiction; binaural beats; digital prevention; Algerian society; mental health.*

Introduction

The world today is witnessing an immense technological and electronic wealth and revolution, as mastery of technology has contributed to the growth of flows across the Internet. This success and the accelerating demand have contributed to the spread of many new phenomena in Arab society, and in Algerian society in particular, with the spread of social media platforms, where information can travel the distance to its recipient in a matter of seconds. Consequently, the state has had to develop the network in parallel with developing the means to combat the adverse consequences produced by the unlimited development of the Internet. This is according to the statement of “Ali Kahlan,” Director General of Satlinker, a company providing Internet services, information technology security, and business solutions, and President of the Association of Internet Service Providers, because these developments and the massive flow of the Internet would facilitate the infiltration and entry of certain phenomena and new electronic toxins into our homes and our society, such as the so-called digital drugs or electronic addiction.

The practice of consuming digital drugs is one of the new deviant practices associated with the Internet, which has spread among large groups of young people in some Arab societies—albeit to a lesser extent thus far. It becomes important, and a duty of science, to attempt to approach the nature of this practice, its origins and development, the cultural dimensions associated with it, and the risks and harms it may entail for the security of our Arab society, especially the security of its youth, as they are the segment most exposed to such dangers. This is what this research paper will attempt to provide. Hence, the research problem was formulated as follows:

What is the nature of digital drugs as an emerging addictive phenomenon on the Internet, what are the mechanisms by which they operate, what are the psychological and physical harms resulting from their use, and what are the ways to combat them in Algerian society?

Significance of the Study

The significance of this study lies in shedding light on a recent and growing phenomenon (digital drugs) whose study has not yet matured in Arab and Algerian society, in order to warn against its dangers, which may threaten the youth and adolescent category, and to propose preventive and therapeutic mechanisms before it spreads on a wide scale.

Study Objectives

- To define digital drugs (their nature, mechanism of action, and types).
- To reveal the scientific and technical foundations on which they rely (the “binaural beats” technique).
- To monitor the potential health, psychological, and social harms of their use.
- To provide preventive recommendations for families, educational institutions, and the government to combat the phenomenon.

Study Hypotheses

- Digital drugs produce changes in brain waves that mimic the effect of traditional drugs.
- The phenomenon spreads more rapidly among adolescents and young people because of the ease of access to it via the Internet and its low cost.
- Societal awareness of the seriousness of this phenomenon remains limited, which increases the need for awareness programs and deterrent legislation.

Study Methodology

The researcher adopted the descriptive-analytical approach through:

- Reviewing the literature and previous studies (foreign and Arabic).
- Analyzing the available theoretical content on the “binaural beats” technique.
- Monitoring the opinions of researchers who support and deny the idea of the effect of these audio files.
- Drawing conclusions and recommendations based on comparative theoretical analysis.

First: Cybercrime and the Nature of Digital Drugs

The pace of life in virtual society is accelerating, and virtual society has come to dominate the lives of many individuals, to the extent that some individuals have replaced their real lives with their continuous presence and practice in virtual society. This is no exaggeration, for everything virtual has become intertwined with most details of real life. Moreover, the characteristics of virtual society entice most individuals and draw them entirely into the virtual world. Virtual society has become a reality more real than the reality from which individuals have begun to escape.

Virtual society, or the Internet, has allowed the emergence of many interactions and activities—human, social, educational, commercial, and economic. We are here dealing with a global society and market, where everything can be traded, even what is classified as prohibited, including digital drugs, which appeared years ago and are promoted and exchanged over the Internet. Strangely, they are marketed as legal and safe, and at low prices, especially in the absence of any laws regulating, criminalizing, or prohibiting them.

Digital drugs are considered part of the multimedia content on the Internet, and are among the emerging threats to the cyber world. They began to spread through media circulation, and today they are the subject of numerous studies, research, and meetings in many countries of the world. These sounds or tones are directed through the ears, producing external effects similar to what many drugs and narcotic substances consumed in reality do (Minchev et al., 2014, p. 1).

1. Definition of Digital Drugs

Digital drugs are considered a new type of drug, embodied in the form of audio files that target brain waves directly. It is believed that their emergence began in the city of Oklahoma in the United States, where news spread through the media that a number of students showed symptoms of euphoria and intoxication, although they had not consumed drugs or alcohol, but rather had listened to a certain type of music with special sound frequencies.

Digital drugs, more precisely also called “binaural beats,” are a set of sounds or tones believed to be capable of producing brain changes that alter or suspend consciousness in a manner similar to what the consumption of real drugs produces, such as opium, hashish, marijuana, etc. (Walsh, 2011, pp. 5–60).

Digital drugs are also audio files containing monaural or binaural tones that the user listens to, causing the brain to reach a state of numbness similar to the effect of real drugs—at least this is what some claim. These audio files were designed to simulate the hallucinations and states of ecstasy accompanying the consumption of narcotic substances, by affecting the mind subconsciously. This effect occurs through sound waves inaudible to the ear called “white noise,” covered with some simple rhythms to mask the disturbance of those waves (Abdul Rahman, 2010, p. 5).

Others consider digital drugs a type of loud music that produces an effect on a person’s mood, mimicking the effect of “marijuana, hashish, cocaine, and other known types of drugs.” They are listened to through earphones or loudspeakers, and the brain merges the two signals, resulting in the sensation of a third sound called “binaural beats.” This state leads to creating illusions in the person listening to this music, transporting them into a state of unconsciousness that may cause them to lose psychological and physical balance.

It can be confirmed from the foregoing that digital drugs are a series of audio files listened to in a certain way, relying on earphones, which produce hallucinatory effects or modify the mood, emotional, and biological states of the listener, and

modify the individual's abilities of concentration, meditation, and attention. These audio files rely on creating synchronization between sound and certain brain waves, and the final results after listening to these files are the individual's entry into a state similar to the states produced by consuming real drugs (e.g., marijuana, opium, or hashish) (Anitel, 2011, p. 12).

Second: From Sound Frequencies to Effects on Mind and Body

Music is a mirror in which the civilizations of peoples are reflected, and history reveals this truth, showing us the images and mentalities of different peoples and the variation in their ways of thinking about music across different eras. This can be confirmed through what Ibn Khaldun pointed out in his *Muqaddimah*, saying: "The first thing to decline in a state when civilization declines is the craft of singing."

The Arabs did not realize the importance of music through entertainment alone. The Arab scholar Abu Bakr al-Razi discovered the benefits of music about two thousand years ago, as he noticed that some patients suffering from diseases that cause programmed pain forget this pain and are enveloped in calm and stillness when listening to melodious tunes and pleasant tones. With his refined and sensitive perception, he realized that music must have an effect in relieving pain and healing some diseases, and after several experiments he concluded that beautiful music has a decisive effect in healing some of these diseases, and he came to rely on it as a method of medical treatment (Kaadan, 2010, p. 15).

Hence, it is not new that music and sound have a profound effect on humans, although sounds and interaction with them are fundamentally a personal experience, and humans possess different images of interacting with the sounds and music around them. There are sounds that make people feel nervousness, tension, anxiety, and fear, just as there are rhythms of certain sounds that make people feel active and energetic. For example, a certain type of music may make children more active, and may improve their ability to pay attention and concentrate during study (Siever, 2009, p. 2).

When musical tones are used for entertainment or amusement, the result requires the physiological and psychological response and emotional acceptance of the tones by the person, in addition to the criteria governing the person's taste. The person's acceptance of the tones is thus an important matter when choosing the type of musical tones.

1. The Use of Music in Relaxation and Therapy

Many foreign studies have attempted to clarify how the "conscious" use of music can carry certain effects and benefits for the human mind and body. Among the important facts confirmed by these studies is that there is no doubt that music, played in a certain way, can play an important role in treating a number of pathological symptoms that a person may suffer, and that music carries many positive effects on human mental and psychological health. This can be confirmed by presenting and analyzing the efforts of two researchers who were interested in this topic and founded it through many studies and scientific applications.

a. Heinrich Wilhelm Dove

Wilhelm Dove, the German physicist, is the one who discovered the idea of "binaural beats" in 1839. Interest in his idea increased in the late twentieth century, as a form of alternative medicine, where music was relied upon to induce the brain to relax, meditate, and achieve mental clarity, and to produce a set of desired effects. The brain waves are affected by relying on the difference in the frequencies of each ear; for example, setting one earphone to a frequency of 300 Hz and the second to 310 Hz produces a certain sensation (Caterina, 2008, p. 103).

This discovery was tested by the American physicist Gerald Oster in 1973, inside one of the American medical colleges in New York State, where certain types of music were mixed with other sounds and tuned to specific frequencies in both ears. The initial results confirmed that these types produced certain brain changes that had not been experienced before, and this development was treated as a possibility for developing a new brain technology that should be studied and tested through research and medical centers in universities, to ensure the safety of relying on it in treatment and alternative medicine.

These studies confirmed the necessity of verifying the positive effects of these sounds, because not all sound sources have a positive effect on health. There are certain patterns of music that may create states of weakness and debility in the mental and physical condition of the human body, and cause many dissonances and discomfort for the person, exceeding what the noise around us may leave when we are exposed to it for long periods (Caterina, 2008, p. 106).

b. Richard Lawrence

He is a musician and director who led a number of musical bands. He was born in Scotland in 1936 and played the violin and a number of other musical instruments, in addition to possessing superior skills in sound engineering. Lawrence produced many musical audio recordings aimed at developing and stimulating concentration, learning, thinking, productivity, and inspiration, and supporting relaxation. For example, Lawrence produced musical pieces that support mental relaxation, rest, and the renewal of mental and muscular activity. These musical pieces include phrases of world classical music, with the introduction of some other sounds, such as the music of Bach and Beethoven, among others. He bases these musical pieces on his experience as a musician and his research spanning more than twenty years, to determine the effects of music on the human psyche and on human physical abilities (Caterina, 2008, p. 107).

Lawrence's project was an alternative to noise in our contemporary world. He pointed out that we are all drowning in the sounds of machines and surrounded by sources of noise in our modern world, which negatively affects our mental and

physical abilities, and therefore we need to create and produce healthy sound to mask the pollution of the environment by the noise around us.

We conclude from the foregoing that the idea of relying on music to support certain positive changes in the mood, emotional, and physical state of the human being is an old idea, and seems entirely confirmed, meaning that music has positive effects on humans, in that it can help the individual to relax, reach mental clarity, and recover after the physical effort that a person may exert.

Music Addiction

The Internet has succeeded in establishing virtual society at an accelerating pace in terms of its mechanisms and the growth of its users. Virtual society has now become part of the lives of millions of people, and the Internet has been able to shape its own world—a world that can only be described as having become a world parallel to the world of daily life. Many Internet sites have become like homes, and some do not exaggerate when speaking of a virtual homeland. Social networking sites have developed the mechanisms of interaction that take place within their contexts, attracting millions to engage in their interactions. Social networking sites are characterized by ease of access, and most of them do not impose difficult membership requirements. The observer of the reality of social networks realizes that they are a source of attraction for many individuals because they offer services freed from the constraints of time and place (Rashad Zaki, 2013, p. 8).

The Internet came against the backdrop of the communications and information revolution, which cast its repercussions on various aspects of human life—material, spiritual, and recreational. This enabled some individuals to benefit from the applications of this revolution in carrying out many criminal ideas, including the manufacture of audio files in a certain way through sound engineering technologies, relying on the idea of binaural beats, and promoting them over the Internet as a type of drug that suits the nature and culture of this era.

Addiction is no longer confined to traditional drugs, but the winds of change sweeping everything have brought a modern fad in the world of drugs that reaches the farthest corners of the world in a single moment without borders stopping it. With the spread of Internet use, which is among the developments witnessed by the Arab and Islamic world in recent years, almost every home has become connected to this service, described as a double-edged sword: it is useful in communication and learning, while at the same time carrying a great danger to the health and minds of young people and their future if used without awareness. A strange type of addiction has spread, consisting of an online program used by young people to download types of loud music that produce an effect on mood mimicking the effect of marijuana, cocaine, and other types of drugs.

Sound engineering technology has facilitated the makers of these audio files on two levels: the first level works to create a pattern of listening that produces effects in the ear, and the second level of sound creates effects in the brain, by beating each ear with certain tones at a sound level that differs in terms of tones and frequency. This ultimately leads to certain brain and mood changes.

The digital drug trade takes the Internet as a market and headquarters for selling and promoting these drugs, which are audio and music files of the well-known and widespread MP3 type, used through all means of communication, such as desktop computers, laptops, mobile phones, iPads, and tablets. These music files are marketed at prices not exceeding \$3 per file, and are downloaded for trial without any material costs, as a way of attracting individuals and advertising such drugs, especially since those who try them and confirm their effects will return to buy a second time.

Third: How Digital Drugs Work

Digital drugs rely on the technique of binaural beats, broadcasting two similar sounds manufactured in a certain way, each ear receiving a frequency different from the other. This leads to inducing the brain to generate slow waves such as alpha waves associated with the state of relaxation, and fast waves such as beta waves associated with states of wakefulness and concentration. The recipient feels a state of unconsciousness accompanied by hallucinations and loss of physical, psychological, and mental balance.

Moreover, the act of consumption itself does not take place chaotically but according to certain rituals and practices. In other words, the makers and promoters of this type of digital drug have created specific cultural practices for its consumption, with which the user is instructed to comply when purchasing these files. These practices are clearly documented on most websites promoting these drugs over the Internet, and the user can obtain them in the form of a paper file (PDF), which serves as a paper guide of up to forty pages, explaining to the user how to obtain the drug (high-quality audio files), their classifications and the symptoms they produce, linking them to a specific real drug, as well as the rituals of use and the instructions that the user must follow to reach the desired goals of the digital drug.

The consumption of these digital drugs is associated with many important conditions or requirements for the user, such as the necessity of wearing good or original earphones and listening to the narcotic audio files according to many conditions (e.g., sound levels, lighting level, method of physical relaxation during listening, the specified listening time, etc.) (Kiilakoski, 2011, p. 449).

The websites of these drugs on the Internet allow choosing among many musical tones available in several doses, as the type of music and the required dose can be selected. The durations of the tones vary according to the desired state, starting

from 15 minutes and reaching 30 or 35 minutes. The listener isolates themselves from the outside world, closing their eyes, putting on earphones, turning off the lights, and also turning off all surrounding devices, especially the phone.

Fourth: The Effects of Digital Drug Use and Ways to Combat It

Digital drugs are characterized by their effect on the brain, approaching the effect of drugs of various types, as this music affects its listener and separates them from time and place, according to the site of digital music doses (i-dosing). Some experts have warned of the bad effect of these musical doses on their users. The digital music doses according to “i-dosing” are auditory tones that alter human consciousness, creating a mood that mimics what recreational drugs of all kinds produce, from cocaine through heroin to hashish. The musical tones work according to a method that plays on two different degrees of electricity to produce a tone inside the head, which in turn changes the brain waves that control the psychological states of the human being. Addiction to loud music is one of the cases of music addiction, as German and Japanese researchers confirmed that loud music causes damage to the nervous system. A study conducted on two groups of young people examined the nerve and auditory cells of people in the two groups, and it was found that those in the group of loud-music addicts were subjected to an effect that caused damage to nerve cells and the auditory cortex, while the members of the second group were not exposed to these effects (Kiilakoski, 2011, p. 450).

These doses of loud music produce a bad effect on the level of the brain’s electricity, and this does not only make the user feel euphoria and delight, but also enters them into what is medically called “mind wandering,” a moment in which concentration sharply decreases and during which the person disconnects from reality. The repetition of the variation in the level of electricity in the human brain over time leads to entering states of “convulsions” and loss of control, and irritates the human nervous system (Abdul Rahman, 2010, p. 8).

Many studies and research have mentioned that individuals exposed to binaural beats are vulnerable to entering the territory of depression and anxiety, and severe deterioration in mood and emotional states, meaning that they suffer from many varied and unjustified transformations in their emotional states over the course of a single day, which casts serious and harmful repercussions on various aspects of their lives and their interactions with others (Al-Saleh et al., 2015, pp. 8–9).

Although there is variation and no absolute agreement on the overall effects of consuming digital drugs, it is certain and agreed that they represent a form of contemporary addiction, involving the user’s entry into an abnormal state that negatively affects various aspects of their private and public life. Studies clearly warned those who listen to these audio doses that these audio files negatively affect mental and physical health, and that excessive use of stimulating sounds can lead in the long term to sleep disorders or anxiety, just like the use of stimulants used in some pathological cases as psychological treatment. These studies indicated that we need more biological and empirical verification of the overall repercussions of this pattern of drugs (Anitel, 2011, p. 18).

Key Findings

- Digital drugs are audio files that rely on the technique of sending two different frequencies to each ear, producing changes in consciousness that mimic the effect of traditional drugs (euphoria, hallucination, mind wandering).
- These files are marketed as a “legal, safe, and cheap” alternative, which increases the risk of experimenting with them, especially among young people.
- There are specific rituals for their consumption (good earphones, dim lighting, isolation), which deepens behavioral addiction.
- They cause confirmed health harms: sleep disorders, anxiety, depression, convulsions, loss of concentration, and damage to auditory nerve cells with excessive addiction.
- Despite researchers’ disagreement about the degree of their effect, they agree that they represent a form of contemporary addiction that requires prevention and awareness before treatment.
- There are no deterrent laws specific to them in most Arab countries, which calls for legislative and technical intervention (blocking websites, monitoring content).

Key Recommendations for Preventing Digital Drugs

How to prevent digital drugs, and the responsibility of the individual, society, and government toward the issue:

- The government must update the deterrent laws that prohibit the use of these drugs.
- Training special teams to monitor such websites that promote this type of drug and working to block them.
- The government must seek strong international cooperation to identify the source of these drugs and work to apprehend their promoters.
- Organizing training and guidance courses for young people on the harms of electronic drugs.
- Families must be vigilant and exercise a kind of supervision over their children.
- The government must coordinate with schools and universities to hold awareness sessions on the danger of digital drugs.
- Parents must urge their children to participate in social and volunteer activities that channel young people’s energies.

- Parents must strengthen the bonds between themselves and their children to ensure that the children openly share what is on their minds.
- Subjecting the user to awareness sessions on the dangers of digital drugs and their physical and psychological effects.
- Parents must integrate their child who consumes digital drugs into many activities to rid them of the obsession with listening to these tones.

Conclusion

In conclusion of this paper, we affirm that digital drugs represent one of the emerging challenges imposed by the communications and information revolution, which specifically targets the youth and adolescent category in our Arab and Algerian societies. Despite the ongoing debate about the extent of their actual danger compared with traditional drugs, there is agreement on considering them a form of behavioral addiction that must be dealt with seriously and consciously. The effects these audio files leave on brain waves and the psychological and mood states of individuals make them a potential gateway to broader worlds of addiction, especially in the absence of family and legislative supervision. Therefore, confronting this phenomenon requires an integrated approach that begins with awareness and sensitization to its dangers within families and educational institutions, and does not end with updating deterrent laws and training specialized teams to monitor the electronic websites promoting them. Investing in building sound digital awareness among children, strengthening family bonds, and providing positive recreational and sports alternatives are preventive steps more effective than any subsequent treatment. Finally, field scientific research remains open to uncovering more secrets about this phenomenon, while affirming that prevention is better than a thousand cures, and that an ounce of prevention is worth a pound of cure.

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