

**BODY, DRUG AND MOVEMENT**  
**O CORPO, A DROGA E O MOVIMENTO**  
**EL CUERPO, LA DROGA Y EL MOVIMIENTO**

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**ABSTRACT**

This is a reflective article that aimed to make considerations on the effects of drug use in human movements based on experiences witnessed in a Psychosocial Care Center (CAPs). Acute and chronic effects of these substances were discussed, highlighting the lack of coordination and balance and fine tremors of the extremities as acute effects of alcohol. Alcoholic polyneuritis was identified as chronic effect. Among the acute effects of cocaine and crack were psychomotor agitation, and among the chronic effects, dystonia and chorea. In the case of marijuana, this causes lack of coordination and reduced ability to perform complex motor activities. However, other viewpoints are possible when considering the body that moves through intention, desire, direction, that is, through intentionality. Thus, it is believed that this study supports the qualification of bodily therapeutic practices of care for drug users beyond the purely physiological dimension, which contributes to the expansion of this knowledge in various health professions: Nursing, Physiotherapy, Physical Education, among others.

**Keywords:** Street Drugs; Ethanol; Substance-Related Disorders; Motion; Human Body.

**RESUMO**

*Trata-se de artigo reflexivo que objetivou tecer considerações sobre a ação do uso de drogas no movimento humano a partir de vivências em um Centro de Atenção Psicossocial (CAPs). Foram discutidos os efeitos agudos e crônicos dessas substâncias, destacando-se como efeitos agudos do álcool a falta de coordenação, desequilíbrio e tremores finos das extremidades. Como efeito crônico, a polineurite alcoólica. Entre os efeitos agudos da cocaína e crack citam-se a agitação psicomotora e entre os efeitos crônicos a distonia e a coreia. Já a maconha provoca incoordenação e redução da capacidade de executar atividades motoras complexas. Contudo, quando se considera o corpo que se movimenta por meio da intenção, do desejo, do sentido, ou seja, por meio da intencionalidade, outros olhares são possíveis. Desse modo acredita-se que este estudo fornece subsídios à qualificação das práticas terapêuticas corporais de cuidado ao usuário de drogas para além da dimensão puramente fisiológica, o que contribui para a ampliação desse conhecimento por diversas profissões da saúde: Enfermagem, Fisioterapia, Educação Física, entre outras.*

**Palavras-chave:** Drogas Ilícitas; Etanol; Transtornos Relacionados ao Uso de Substâncias; Movimento (Física); Corpo Humano.

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## RESUMEN

Se trata de un artículo de reflexión sobre las consecuencias del consumo de drogas en el ser humano a partir de las vivencias en un Centro de Atención Psicosocial (CAPs) donde se discutieron los efectos agudos y crónicos de dichas sustancias. Entre los efectos agudos del alcohol se destacan la falta de coordinación, de equilibrio y los temblores en las extremidades. Como efecto crónico se menciona la polineuritis alcohólica. Entre los efectos agudos de la cocaína y del crack se citan agitación psicomotora y, entre los crónicos, distonía y corea. La marihuana causa falta de coordinación y disminución de la capacidad de realizar actividades motoras complejas. Sin embargo, si se considera que el cuerpo se mueve a través de la intención, el deseo y el sentido, o sea, por medio de la intencionalidad, entonces también caben otras miradas. Por lo tanto, se cree que este estudio refuerza la clasificación de las prácticas terapéuticas corporales de cuidados a los usuarios de drogas, más allá de la dimensión puramente fisiológica, lo cual contribuye a la expansión del conocimiento para varias profesiones de la salud, entre ellas enfermería, fisioterapia y educación física.

**Palabras clave:** Drogas Ilícitas; Etanol; Trastornos Relacionados con Sustancias; Movimiento (Física); Cuerpo Humano.

## INTRODUCTION

The use of psychoactive substances is an ancient practice and is not, therefore, exclusive of contemporaneity. The customs of each society have directed the use of drugs, which, in the past, were restricted to small groups. Nowadays, however, it appears that drug use happens in various circumstances and among people from different groups and backgrounds.<sup>1</sup>

In the last decades of the twentieth century, drug use represented a mass phenomenon and a public health problem. For this reason, the concept of dependency was no longer considered a flaw of character but gained the definition of mental disorder.<sup>1</sup>

In this context, themes that somehow approach the body in several spaces became paramount in the discussions on the body-movement-drug relationship. Thus, we sought to build a reflective article from experiences witnessed in Psychosocial Care Center (CAPs) guided by the following objective: to make considerations about the action of drugs over body movements considering the physical, social and subjective dimensions of the human being.

## DRUG USE AND HUMAN MOVEMENT: INITIATING APPROACHES

The understanding of the effect of drugs on human movement calls for knowledge on their action in the central nervous system (CNS). When a person receives a stimulus from sensory organs, this message is sent to the CNS and information is processed through a network whose basic structure is the neuron. The synaptic cleft is the space where information is exchanged between neurons – neurotransmission – and this occurs by releasing messenger substances (neurotransmitters), each with specific functions. Psychotropic drugs act by altering communication between neurons, producing effects that depend on the neurotransmitter involved and the way of action of each drug.<sup>2</sup>

The World Health Organization defines psychotropic drugs as substances that “act in the CNS producing changes in behavior, mood and cognition and with high reinforcing aspect, substance that can be self-administered, or those substances

that, in a simplified way, brings us to the idea of dependence”<sup>2,11</sup> These substances are classified as depressing (alcohol), stimulating (cocaine and *crack*) or disturbing (marijuana) the CNS.

## ALCOHOL

Regarding the acute effects of alcohol, two distinct phases should be considered: a stimulating (euphoria and disinhibition) and a depressant (lack of coordination and sleep).<sup>2</sup> The gamma-aminobutyric acid (GABA) is the major inhibitory neurotransmitter of the brain and one of the most affected by alcohol. Its action in intoxicated individuals cause a set of common motor signs: lack of coordination and balance, fine tremors and paraesthesia.<sup>3</sup>

Among the changes resulting from chronic use of alcohol is the Wernicke-Korsakoff syndrome. This is characterized by nystagmus; cerebellar ataxia and acute mental confusion; cerebellar degeneration with ataxia; alcoholic polyneuropathy, a distal sensitive-motor disorder resulting from degeneration of axons and myelin sheaths.<sup>4</sup> The latter is characterized by pain, tingling, cramps, muscle weakness, loss of reflexes and sensitivity, especially in the lower limbs.<sup>2</sup>

Individuals who make chronic use of alcohol may develop alcohol withdrawal syndrome if ingestion is suddenly ceased. In this case, tremors, gastrointestinal disorders, sleep disorders and general restlessness are observed. Approximately 5% of people progress to more severe symptoms such as *delirium tremens*.<sup>2</sup> In turn, hepatic encephalopathy affects more than 50% of cirrhotic patients and symptoms include acute confusion, tremors, involuntary movements of the hands, *delirium tremens* and coma.<sup>5</sup>

The described changes bring to the fore the need to develop care aiming to explore the meanings, representations and values attributed to a body conditioned to the effects of alcohol. Drugs, especially alcohol, have a historical role of social relievers, as they attenuate the intensity of pain and cause the impression that differences (even social) and problems are smaller. The stimulating phase of the action of this substance

promotes contentment, disinhibition, and all kinds of feelings often repressed in a context of vulnerability or of great social pressure, permeated by a flood of information and demands.

In the depressant phase, the body becomes numb and disconnected from the environment, denoting the release, although brief, from commitments, needs and sufferings. Regarding the chronic use, when individuals face serious physical limitations, this seems to trigger mixed feelings: sometimes, the event reinforces the continued use within a self-destructive perspective, or works as motivator to discipline the relationship with alcohol, especially when the user faces a real threat to life.

## COCAINE AND CRACK

Cocaine mainly intensifies the action of dopamine and noradrenaline, which are excitatory neurotransmitters of the CNS.<sup>4</sup> *Crack* is a new form of presentation and administration of cocaine.<sup>2</sup> Among the acute effects are decreased fatigue, psychomotor agitation, euphoria, increased cognition and of wakefulness, sensory alertness and anxiety.<sup>4</sup> Chronic use of cocaine causes dystonia, chorea, and jerky eye movements. These symptoms in addition to seizures and tremors are present in acute overdose.<sup>5</sup> Cocaine may exacerbate the movements in patients with idiopathic dystonia, dystonia related to the neuroleptics, essential tremor or Tourette's syndrome.<sup>6</sup>

Prolonged use of cocaine can trigger an irreversible degeneration called rhabdomyolysis. Muscle-cell necrosis may happen in this condition, common in intoxication, and the myoglobin released by damaged cells can cause kidney failure.<sup>7</sup> It can also lead to decreased dopamine in the synapse, causing anxiety, irritability, impulsivity, fissure, lethargy and depressive signs. The higher capacity of *crack* to cause euphoria triggers a more rapid installation of these changes.<sup>6</sup>

The decision of using drugs occurs often as an attempt to adjust to social productivity standards: there are uses to sleep, to stay awake, to perform well on tests and work, to have courage, to alleviate suffering, among other reasons. In this scenario, stimulant drugs such as cocaine and derivatives stand out because, besides generating pleasure, these substances can improve the performance in certain professions. However, when the body cannot cope with the demands arising from work, this can become a factor of exclusion from the labour market. In this moment, mainly cocaine appears as an option to improve performance. This use is frequently observed among truck drivers, professionals who work at night or serving long working hours.

It is hard, therefore, to set limits for consumption, but such use should not evolve to the point of becoming harmful or even to a necessity for people withstand the demands in their lives. The exact fragility of the body before these substances

does not seem to be clear either. These issues are important and need to be considered when organizing care strategies.

## MARIJUANA

Marijuana represents a drug that disturbs the CNS and produces acute effects such as coordination deficits and inability to perform complex activities such as driving cars.<sup>4</sup> It can also cause sedation (feeling of relaxation and heaviness in the arms and legs), changes in the perception of time, decreased reaction time, sensory changes and motor control, besides tachycardia and orthostatic hypotension.<sup>8</sup> Among the chronic physical effects are decreased muscle strength.<sup>9</sup>

Neuroimaging research on the brain effects of marijuana revealed important findings: healthy volunteers who received D9-THC infusion or placebo showed a significant increase in regional cerebral blood flow (rCBF) in the cerebellar and cortical regions and in several but not all subjects. Those who had reduced rCBF presented significant negative effects in the perception of time.<sup>10</sup>

This observation is consistent with the notion that the cerebellum is linked to an internal system of perception and estimation of time, which are functions commonly altered after using marijuana. Another study showed that regular marijuana users had decreased cerebellar metabolic activity and regional cerebral blood flow.<sup>11</sup>

The option of using marijuana seems to be motivated by opposite reasons than the desired in the use of cocaine. On the daily routine of a CAPS AD, it is observed that the motivations that lead people to use marijuana are several, but most people state that they use it to decrease anxiety, to relax, to enhance creativity and sometimes to improve the mood. Seeking the interface with human movement, it is clear that these effects provide sense of well-being in the everyday demands and stresses and they are aimed at producing a "relieving" effect before the unnatural pace imposed by our society.

## OTHER PERSPECTIVES: THE SUBJECTIVITY OF THE BODY THAT MOVES

The above considerations about the action of drugs over body movements have been prepared taking into account a body composed of various systems that, at any given time, begin to suffer acute or continued action of such substances.

However, other perspectives are possible when considering the subject that moves the body through desire, direction, through gain and loss, pain and happiness, through intentionality of the body in its relationship with the environment.

Freud cites some methods that men use to reach pleasure and, therefore, avoid suffering: isolation, sublimation, love, delir-

ium, religion, and others. Some of these features are supported by our culture as they are in line with our assumptions of civilization. Freud considers intoxication as a coarser and at the same time, more effective method to move our corporeality. This is because of its immediate ability to produce pleasure and cause alienation of the outside world problems, even if temporarily.<sup>12</sup>

In "Civilization and its Discontents", Freud says that suffering threatens the human being in three directions: from our own body doomed to aging and dissolution, from the external world with its opposing forces, and from our relationships with other. The latter was considered by several thinkers to be the most painful suffering. The act of using drugs would be a way to access a kind of joy that does not comes from the relationship with others, from others' bodies. Rather, it is a way of experiencing joy that excludes this other.<sup>12</sup>

The relationship body and increased use of drugs is an instance of the production of the social that sets up a cultural mechanism of repression of human intensities, which produces subjects captured in their processes of expression and pleasurable connections in life. From this perspective, the body-drug connection comes as a deterrent mechanism of the contact between subjects and their real possibilities of life, of criticism and invention.<sup>13</sup>

In an intoxicated body, there is a decrease of movement amplitudes and flexibility, exacerbation of tensions muscular obstacles and decreased motor coordination. This denotes an impoverishment of the relationship between mind and body: "there is a departure from the perception of the body that feels, that suffers, that cries its illnesses and this is almost always mediated by the psychoactive substance, with impoverishment of the knowledge of knowledge about oneself, when trying to talk about te own life networks".<sup>13</sup>

Finally, the use of drugs reveals an ambiguity and one of the many human contradictions. Sometimes, drug use is fostered by the search for a condition in which there is no relationship with the environment and with others, the expression of a selfish and solitary pleasure: there is no intention, expression or connection with the environment. Other times, drug use happens due to the intention to adapt the body to the demands of a culture of productivity and performance: there is intentionality in movements and connection with the environment.

## FINAL CONSIDERATIONS

Providing care for drug users means to consider the biopsychosocial model of health, looking at subjects in their entirety and as active beings in the health/disease process. In this sense, interdisciplinary teams emerge as strategic elements and

body therapies are indispensable tools in both preventive and therapeutic actions. Despite the fact that the care provided to drug users is still very focused on doctors and psychologists, understanding the effects of drugs on human movements is of fundamental importance when seeking to develop any body work in the context of drug addiction. This is a possibility not explored by the health professions.

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