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ADDICTION A MEDICAL SPECIALTY AND SUB-SPECIALTY OF THE PSYCHIATRY

LA ADICCIONOLOGÍA UNA ESPECIALIDAD MÉDICA Y SUBESPECIALIDAD DE LA PSIQUIATRÍA

Martín Nizama-Valladolid[1,a,b], Fernando Luna[1,a,b], Carlos Cachay[1,a,b]

REVIEW ARTICLE

ABSTRACT

Addiction is a component of the health sciences and it is achieving rapid recognition as a medical discipline, specifically as a subspecialty of the psychiatry. The problem of addiction is a subject that extends and worsens in postmodern society, due to being multidimensional and multifactorial. Health conditions of countries in the world have improved in terms of reducing mortality and the incidence of some communicable diseases. However, there is a higher incidence of chronic noncommunicable diseases related to lifestyles. For example, problems of health derived from violence, the consumption of drugs, social addictions, leisure and digital addiction (connectivity). Family factors including rejection of parents and family conflicts, due to the abuse of substances and problems of mental health are one of the strongest and more consistent predictors of behavior and issues in adolescents. On the other hand, the Holistic Family-Centered Model, Nizama proposes integral human development through multidimensional organization as an axis of life that comprises eleven dimensions of human life: body, genetic potential, personality, human essence, cognition, imagination, lifestyles, assets, image, futurity, and posterity. In conclusion, addiction is the medical specialty indicated for the successful and hopeful handling of this volitional disease in all groups of age, with sustainable and committed family adherence.

Key words: Addiction; Psychiatry; Medicine of addictions; Family. (source: MeSH NLM)

RESUMEN

La Adiccionología como componente de las ciencias de la salud, está alcanzando un rápido reconocimiento como disciplina médica, específicamente como subespecialidad de la psiquiatría. El problema de las adicciones es un tema que se extiende y se agrava en la sociedad posmoderna, debido a su multidimensionalidad y multifactorialidad. Las condiciones de salud de los países han mejorado en cuanto a la reducción de la mortalidad y de la incidencia de algunas enfermedades transmisibles. Sin embargo, se está dando una mayor incidencia de enfermedades crónicas no transmisibles relacionadas con los estilos de vida, así como la emergencia de problemas de salud derivados de la violencia, el consumo de drogas, adicciones sociales, lúdicas y adicción digital (conectividad). Los factores familiares, incluyendo el rechazo de los padres y los conflictos familiares, debido al abuso de sustancias y problemas de salud mental, se encuentran entre los predictores más fuertes y consistentes de los problemas de comportamiento de los adolescentes. De otro lado, en el Modelo Holístico Centrado en la Familia, Nizama propone el desarrollo humano integral mediante la organización multidimensional como eje de vida que comprende once dimensiones de la vida humana: corporal, potencial genético, personalidad, esencia humana, cognición, imaginación, estilos de vida, activos, imagen, futuridad y posteridad. En conclusión, la adiccionología es la especialidad médica indicada para el manejo exitoso y esperanzador de esta enfermedad volitiva en todos los grupos de edad, con adherencia familiar comprometida y sostenible.

Palabras clave: Adicción; Psiquiatría; Medicina de las adicciones; Familia. (fuente: DeCS BIREME)

[1] Departamento Académico de Psiquiatría, Facultad de Medicina, Universidad Nacional Mayor de San Marcos, Lima-Perú.
[a] Psychiatrist.
[b] Doctor in medicine.

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INTRODUCTION

From the fundamental perspective of health sciences based on evidence in the field of genetics and brain function, addition is position as a medical specialty and subspecialty of psychiatry. With this objective, the multicausal and multidimensional complexity of this nosological entity is addressed; as well as the modern models and theories that are the paradigms of this area of medicine. As a result, it reviews, analyzes and integrates the different predominant approaches; from the biogenetic and the styles of life to family composition and community. All of these factors have enabled the application in the field of prestacionales health systems. The outset to develop and implement successful long term treatment programs, after various years of systematic intervention[10].

The impact of the current demographic and epidemiological transformations caused by globalization is analyzed. The results have determined critical structural changes in the population and social organizations, especially in the natural family. The family once the primary cell of society is currently displaced by individualism in the context of an essentially materialistic, pragmatic, hedonist, banal and dehumanizing postmodern world. This society is dominated by knowledge, information, technology, comfort, and consumerism imposed by the market. In this globalized world, the natural family has been converted into a purely procreative and supplier entity, deprived of authority, deprived of a disciplinary role and of being the primary social focus of human essence. As such, the family has ceased to be a source of education as well as love, guiding principles, values of life and superior feelings.

This context he has been favorable causing the areas of addiction in the s. XXI to face new challenges as:

1. The emergence of new synthetic drugs. As well as traditional medicines that are being manipulated, and other addictions related to digital technology such as video games, social networks, cyber-navigation, and cyber-gambling.

2. The demographic and epidemiological profile of the addictions has had substantive changes. It went from a pathology dominated by men and adult mono-users to a disease in which every day the number of female users, children, teenagers and young people of both genders increases. Today polydrug use, polyaddiction, and multiple family addiction prevail at home. For example, alcoholism, smoking, dependence on psychotropic drugs and addiction to illicit psychoactive substances. Also the high prevalence of psychiatric comorbidity that exceeds 70 per hundred.

3. The four types of existing addictions are social, playful, digital and chemical. These addictions have a single core which is the cortical mesolimbic pathway. This mechanism is the center of positive and negative reinforcement, which makes addictions a unique disease not subject to fragmentation.

4. Pathology of the family anomie. Structural and functional family chaos which support the various addictions[1].

The psycho-organic deterioration caused by the different addictions is the neurobiological basis of the clinical syndromes of this morbid entity, whose main manifestations are the unconsciousness of disease, the loss of the will, the loss impulse control and insensitivity. It includes neurodegeneration and disruption of the neuronal circuits of the prefrontal lobe of the brain[10,11,12,13]. As a result, the DEIDAE of Addictions of the Institute National Mental Health "Honorio Delgado-Hideyo Noguchi," since its inception 24 years ago has applied therapeutic alternative models with programs integral in the approach to addictive disease, with a focus on gender and addressed to populations vulnerable: children, adolescents, and young boys.

It is essential to know the in-depth scientific knowledge of addictions to understand how they impact society, the family, and the people addicted. It is done to prevent this pandemic by promoting healthy lifestyles and culture of values. The goal is to improve the quality of life of the people affected by this volitional disease and to develop quality care by scientifically competent teams. It is crucial to have an objective perception and not to stigmatize the addictive disorder. Some unfit professionals believe they know how to handle an extremely complex illness, but they are unaware of the complexity and the clinical essence which exposes the patients to the syndrome of the "door rotating." This syndrome is the belief of the incurability of the addictions and likely fatal outcomes[8,9] which causes despair for the patient's family.

The knowledge of addictions has had accelerated and essential changes in the last decades. As result, of the advances of recent research on the understanding of genes and the human brain as well as in the studies on family and social groups in the psychosocial field

has made viable the construction of a theoretical framework of addictions as a discipline of health sciences and human behavior. This new information has led to design and implement intervention models with successful long-term therapeutic programs. These treatments performed by teams specialized in interdisciplinary concepts required for the approach of the addictive disease include the involvement and full adherence of the family involved in the integral therapeutic process.

Addiction as a component of health sciences is reaching a Quick recognition as a medical discipline, individually as a subspecialty of psychiatry. This concept is mainly due to the tremendous scientific advances particularly in the field of genetics with the human genome project, brain mapping through the project "Brain Research through Advancing Innovative Neurotechnologies (BRAIN), Working Group Report to the Advisory Committee to the Director, NIH", and the human connectome project. The consolidation of new knowledge in this field of medicine related with addictions enables a clear and objective perception of this incredibly complex phenomenon due to its multidimensionality and being multifactorial, which leads to being referred as the two sides of the same coin: 1. A public health problem and 2. A disease, a subspecialty of psychiatry called Addiction.

The Addiction as a branch of the Medicine, as well as in its epistemology, hermeneutics, and nosology is built on internationally accepted theoretical frameworks and scientific models. These models are based on general systems theories like theories of personality development, theories of learning, the theory of human groups, neurobiology, neurosciences, genetics, and sociobiology, among other conceptual frameworks that underlie models that are paradigms in the study and approach to human behavior. An example of this can be seen in the Holistic Model-Centered of the Family, with its ecological, biological, psychic, family dimensions, social and spiritual, and the "Model Biopsychosocial for the confront of patients" (Annals of Mental Health 1991 VOL VII).

After globalization and the advent of the twenty-first century with technological development, social dehumanization and massive displacement of the family by extreme individualism, addictions have become a public health problem. Appearance of new synthetically produced psychoactive substances, classic genetically manipulated drugs and new addictions of digital form (A product of the technological revolution in communication with the Internet) has propitiated the appearance of new shapes of addictive pathology such as digital addiction. This addiction (video games, social networks, and cybernavigation), affected vulnerable populations such as women and specific age groups as children, the adolescence and the youth. This situation has constituted a real challenge for the professionals specialized in the face of these new forms of addiction and forced them to develop comprehensive programs aimed at to these populations with urgent specialized treatment that has effectiveness at long-term periods.

ADDICTION: MEDICAL SPECIALTY

Drugs are present in all societies, and they constitute the center of a social, economic, ethical and political dynamic. Since ancient times psychoactive substances have been part of religious and scientific thoughts. They have also served to justify wars and various processes of social exclusion like geopolitical conflicts of which these substances are often the hidden motive such as drug trafficking and narco-terrorism in the Peruvian VRAEM (Valley of the Apurímac, Ene and Mantaro rivers). Currently, the problem of addictions is a market issue that extends and worsens in postmodern society. National states have begun to be sensitized to the problem of addiction in which intrigue and corruption play a decisive role to degrade the ethical conscience of police institutions, judicial, political and, social. Crime achieves permissiveness and consent of their activities at different levels and thus be able to operate with impunity and even promote the legalization of drugs such as marijuana and cocaine. These drugs can bring severe damages to an individual, family, and the community.

A phenomenon as complex as addictions because of its multidimensionality and being multifactorial has required the structuring of a rigorous body of scientific knowledge. It is based on evidence achieved in recent decades with the progress of medical and social sciences. All this knowledge has allowed the development of therapeutic programs based on scientific evidence. The intervention of professional interdisciplinary teams specialized in addiction have successful treatment. They have obtained indicators of adherence, decreased in relapses, and achieved equal social reintegration. These results exceed those obtained in the treatment of chronic diseases such as oncological, metabolic (diabetes Mellitus), cardiovascular (Hypertension) and HIV / AIDS, among others.

This subspecialty of psychiatry has been recognized academically at the international and national level. The National University of San Marcos, since 2011

began the training of psychiatric doctors in this medical subspecialty.

The Addiction is based on the following principles:

1. Addiction is a chronic disease that affects all the stages of the lifetime and does not only affect adolescence. While addiction has a high prevalence during this stage of a lifetime, is a complex disease for its multicausality and high comorbidity rate. Without specific medical intervention this disease may have a terrible outcome. The approach to addiction is a broad spectrum. It includes aspects of public health and policies that modulate as well as articulate the intra and intersectorality with the intervention of teams specialized in interdisciplinary addiction.
2. Currently, the specialty of addiction and the treatments are internationally recognized. This concept can be seen more in the health institutions with coverage of attention of high complexity. It is a competition of health professionals specialized in this volitional pathology.
3. The profile of the addiction specialist requires all the following competencies.

- Possess stable and sufficient knowledge of biological, psychic and sociocultural factors that allow him to fully understand the addictive phenomenon in its integrity and variability, such as addictions chemical, addiction digital, pathological and addictions social.
- Apply current knowledge, research and innovate preventive strategies to lead and advise on public policies aimed at stopping and reducing incidences.
- Apply current knowledge, innovate and investigate diagnostic, and therapeutic strategies in individuals with addiction in different age groups and gender.
- Know in-depth the pharmacokinetics, pharmacodynamics, adverse reactions and toxicology of drug abuse in human beings (with variation according to gender and age group) to handle the addictive pathology phenomena with suitability: acute and chronic poisoning, syndrome of abstinence, craving, long-term consequences of the use of the same, between others.
- Managing new addictions such as digital addiction (connectivity), gambling, social addictions, and other atypical addictive behaviors. As a result, to dominate the knowledge of the neurobiological basis common to the different types of addictions; like the biological consequences and the deterioration in the personal sphere, family, academic, labor and social.
- Managing the multidimensionality of the addictive pathology in its psychophysiological, organic, psychic, comorbidity and anomie of joint pathology. Also, the detoxification and rehabilitation that enables experts to management the healing and integral, individual and family.

4. Like all chronic diseases, the treatment of addictive pathology is a long- term process that comprises 3 to 5 years or more, which exceeds the criteria of age. Transitions of the life cycle are presented during the long process of treatment, rehabilitation, healing, and integral human development. There may also be relapses, comorbidity events that require continuous adjustments in pharmacological, and psychotherapeutic management for an individual and family. Moreover, the treatment is necessarily focused on reversing the anomie of familiar pathological that incubates and sustains the addictions.

PRINCIPLES FOR THE PROCESSING OF ADDICTIONS[14]

According the Institute National of Drugs and Alcohol of United States (NIDA), the recommended principles for the treatment are the following:

1. A single treatment is not appropriate for all individuals.
2. Effective treatments must be available immediately, when the client the needs it.
3. Effective treatments addresses multiple needs of the individual and not only drugs consumption.
4. Both the treatment and the service plan offered to an individual must be constantly evaluated and modified to ensure that it meets the needs of client.
5. Remain in a treatment for an appropriate period of time (at least 3 to 6 months for the first phase) is critical to its effectiveness.
6. Individual and group counseling, as well as other behavioral therapies, are essential components for the effectiveness of a treatment addictions
7. The administration of medications (pharmacotherapy) is an important element in the treatment of some patients, especially when combined with counseling and other behavioral therapies.
8. People that use, abuse or dependent on drugs also have another mental disorder (double diagnosis). They have to receive treatment for both disorders in an integrated way.
9. The medical detoxification is the first stage of the treatment of addictions and by itself it does very little to change the use or abuse of prolonged drug use (long-term).

10. The treatment does not need to be voluntary to be effective.
11. The possibility of drug use ("lapses") during treatment must be constantly monitored.
12. Treatment programs should provide assessment for HIV / AIDS, Hepatitis B and C, tuberculosis and other infectious diseases. It should also provide counseling on risky behaviors and prevention of such diseases.
13. The recovery of drug dependence can be a long-term process and often requires multiple episodes of treatment.

The Executive Direction of Research, Teaching and Specialized Attention of Addictions of the National Institute of Mental Health "Honorio Delgado-Hideyo Noguchi " (INSM "HD-HN"), applies the following therapeutic principles:

1. There is no single treatment applicable to all cases. The approach has multiple steps and is a long- term treatment.
2. Effective treatments must be accessible immediately when the patient requires it.
3. Effective treatments address multiple needs of the individual and their environment, and not just the addictive behavior
4. The work plan and the treatment offered to the patient must be continually evaluated and readjusted to ensure that the clinical needs of the patient and their environment are met.
5. Stay in a therapeutic program scientifically formulated for a period of time of 3 to 5 years. It ensure the integral human development and thus healing the addiction.
6. Individual and family psychotherapy are essential components for the effectiveness of the treatment of addictions.
7. The pharmacotherapy allows the driving of craving, abstinence syndrome, psychomotor excitement, flashbacks behavior, among other clinical manifestations of the addictions.
8. Addicted people with comorbidity conduct disorder require specific treatment for different disorders which are treated all together.
9. Detoxification is only the first step in the integral treatment of addictions.
10. The anomy of familiar pathology, the polyaddiction, and the family addiction are included in the therapeutic approach of multiple addictions.
11. The therapeutic approach is based on the clinic of addictions and not on dogmatic ideologies, scientific prejudices and it is not subject to conflict of interests outside the addiction.
12. The treatment does not need to be voluntary for be effective. Involuntary treatment is frequent and decided by the family or a judge. Involuntary intervention prevents the degradation and the decrepitude of patient. Also, disintegration of family, self-abandonment, imprisonment or occlusion of the addict 62 .
13. Relapse is common in addiction and should not be cause for discontinuation of the treatment or desertion. This possibility must be considered constantly throughout the treatment
14. Treatment programs must provide evaluation for HIV / AIDS, Hepatitis B and C, tuberculosis and other infectious diseases. They should also provide counseling on risky behaviors and prevention of such diseases.
15. The treatment of addictions is long-term and frequently requires various episodes of intervention.
16. The direction of addictions in the present has three models of interdisciplinary intervention with active family involvement, through the execution of three programs:

- Holistic Model Centered in the Family
- Biopsychosocial
- Integrative

The optimum results in the process of healing of patients have been observed after the commitment of the person and their family to the treatment. For successful results two factors are considered:

1. Adherence or integration refers to the number of patient exposures to the sessions and the application of a number of established procedures in the programs of every one of the three models of intervention.
2. The capability that includes the skills and expertise of the therapeutic team to apply the model adopted, the time foreseen for the interventions, and the degree of response of the patients' behaviors. This is understood in the context of the therapeutic relationship[10].

For both processes to happen, it requires the previous existence of models with their respective therapeutic programs. Without these previous models there is no fidelity, adherence nor competition. In this sense, it is a strength that the Department of Addictions of the Institute has three familiar programs of intervention supported in models and scientific conceptual frameworks in an international field.

NEW CHALLENGES: ADDICTIONS IN VULNERABLE POPULATIONS : CHILDREN, ADOLESCENTS AND YOUNG PEOPLE.

CWith the advent of the twenty-first century marked by globalization, prodigious technological progress occurred that led to enormous quantitative and qualitative changes that radically modified human behavior, life in society, lifestyles and the ecological system, with the consequent crisis of culture and civilization that challenges the conscience of the world questioning the values and principles that sustain societies. Health is constitute in a focal point where theoretical models of the ecological, biological, psychic, social, the individual, the family and the community converge. The social, economic and ethical components concur. Health, in addition to its intrinsic value has become the personal and collective realization of society. Addictions increase in populations, as new substances appear and addictive behaviors such as gambling addiction and digital addiction especially impact the adolescent and young population of postmodern society. At an early age, young population start using chemical drugs, social and digital drugs. These kids become the future citizens of the countries (demographic bonus). So, they stop being a positive social product with generations of healthy individuals that ensure their dynamic participation and activates the building and development of a society wellness.

The health conditions of the countries have improved in terms of reducing mortality and the incidence of some communicable diseases. However, a higher incidence is taking place of chronic diseases that are not transmissible and are related to lifestyle. As well as the priority in health problems derived from violence, the consumption of drugs[14] social addictions, recreational addictions and digital addiction (connectivity).

The changes in the population pyramid and the epidemiological transition shows that countries with median income as Peru which is in a socio-demographic strata has diseases that belong to countries of high income. These diseases which are chronic and not transmissible like diabetes, mellitus, and HPTA, between others. It also shows infectious-contagious diseases typical of low-income societies such as TB, dengue fever, chikungunya infection. Given this change in the demographic and epidemiological profile, the evidence indicates that addictions have passed quickly from a pathology predominantly of male and adult mono-consumers to a disease in which female users increase daily as well as children, adolescents and young people of both genders. These new consumers are commonly polydrug addicts. Likewise, the percentage of multiple addiction in families increases. As a response to this challenge, the Department of Addiction of the Institute has been developing three therapeutic models for 24 years with comprehensive programs to address the addictive disease with a gender focus, targeting vulnerable populations: children, adolescents and young people.

Substance abuse among teenagers rarely occurs in isolation from other developmental disorders and psychiatric disorders[15]. Studies with clinical samples and court cases of minors in the community show that adolescent substance abuse is frequently combined with multiple psychiatric disorders mainly attention deficit hyperactivity disorder (ADHD), depression, and post-traumatic stress disorder (PTSD)[16,17,18,19,20]. In adolescents, the comorbidity rates of the use of substances with psychiatric disorders are on average 60% in community samples [6] and can be increased up to 80-90% in samples of the Department of Juvenile Justice in the United States[21,22,23,24]. Several studies show that treatment engagement and successful results are more difficult to achieve in adolescents with comorbid pathology[23,25,26,27].

The problem in adolescents is mostly externalizing (this refers to the alterations of control of the behaviors such as aggression, impulsiveness, oppositional defiant disorder, hyperactivity and conduct disorder, Achenbach & Edelbrock, 1983; Rock& German, 2000). Thus, many young substance abusers with disorders of severe behavior are at risk of progressing to a dissocial personality disorder, experience chronic substance abuse, have mental health problems, employment, health and relationship difficulties in adulthood[28,29]. The "common factor" and "general deviation" models are often invoked to explain the narrow association between the consumption of substances and psychiatric disorders. These problems are mainly of outsourcing, such as behavior disorder[23]. In fact, as Jessor and Jessor[37] postulate in the "theory of behavioral problem" substance abuse in adolescents tends to concur with a variety of others disruptive behaviors that can have long-

term consequences , including risky sexual practices, school and social failure, isolation, alienation and the conflict. The coherent grouping of these behaviors and the evidence of what they can to have reciprocal effects[31] has led to the examination of the common risk factors that can explain a series of problems of the adolescence period, as early temperament and environmental vulnerabilities[32,33]. Since common risk factors are known to contribute to substance abuse and other disorders in the adolescence. Broad and durable effects can be achieved by using specific interventions to solve these vulnerabilities and promotion of protective processes[34,35].

Family factors including rejection of parents, family conflicts, ineffective supervision, strategies of discipline from the parents, and the functioning of parents at risk due to substance abuse and mental health problems are among the strongest and most consistent predictors of the problems of behavior of the teenagers, such as the abuse of substances and behavioral disorders[36,37]. Protective factors within the family can cushion the negative impact of the risk factors, such as the involvement with diverted behavior[38]. In a recent study, it was observed that the support, involvement, and moral education of a family decreases the genetic risk for drug abuse in adolescents[46]. Associations are consistent between family factors and behavioral problems in teenagers. As well as, strong empirical support for family-based interventions to be tested in a series of essays rigorously controlled in the last two decades[38,39]. Family participation is a critical ingredient in the treatment of substance use disorders in adolescents[40]. Family factors predict a series of problems in adolescence including internalized anguish and outsourcing arrangements. These factors intervene to change the negative interactions and patterns within the family. It is critical that it can impact both the concurrent disorders and substance abuse during adolescence.

Unfortunately, while several treatments have shown efficacy in reduction of substance use by adolescents[38,39] many of these interventions focus in the relief of a specific substance instead of targeting multiple behavioral problems in adolescents. The clinic investigation excludes deliberately complex cases due to having multiple comorbidities. This information has not contributed to clarify the complexity of the nosology of the addictive disease. There are few examples of broad- based interventions that address simultaneously and effectively the abuse of substances and related risk behaviors. These behaviors are sexual insecurity, delinquency, psychiatric symptoms, and problems at school among teenagers[23]. Considering, that abuse of substances between teenagers tends to reoccur and can be exacerbated other emotional and behavioral problems. The interventions for this population must address multiple comorbidities[40]. In fact, integral interventions that simultaneously deal with comorbidity are frequently recommended[19,20,41], but they are scarce in the practice.

In the last documents of orientation and revision of comorbid disorders for the teenagers as well as adults, various experts indicate interventions for substance abuse and mental health problems must be delivered in a truly integrated manner instead of different treatments offered simultaneously or consecutively[20.41].

Regarding gender, it is important to consider not only the treatment according to gender, but the treatment of specific subgroups of women with additions that include pregnant women with Post-Traumatic Stress Disorder (PTSD), women that suffered sexual abuse, Compulsive Alimentary Disorder and Bipolar Disorder, and other frequent comorbid entities. This subgroup not only needs alternatives and therapeutic programs for addictions, but they also need protection for their safety. These conditions are associated to the significative clinical controls of the comorbid disorder. For example, reduction of PTSD symptoms[17]. Findings show that the application of treatment focused on dual pathology in conjunction with the classic treatment of substance abuse reduces the symptoms of the comorbid disease. These results also helps to maintain the reduction of consumption of drugs. On the other hand, it is also necessary to include and consider strategies of treatment considering gender differences, applying specific interventions to reduce HIV risk[42].

The DEIDAE of Additions of the INSM "HD-HN" has applied these variables in the practice of the subspecialty of addition and since April 1, 2001 it attends internally addicted adolescents, as well of others groups of age. Since its creation DEIDAE is the only service of the country that hospitalizes female patients, including teenagers of this gender. The three programs of DEIDAE intervention Addictions Institute offers one comprehensive treatment that it is highly specialized and it is not biased by age nor gender. Proof of this concept are the three family organizations that have a total of more than 300 families committed in a militant way to long-term treatment of mono-substance and polysubstance patients. It does not matter if it's a comorbid disorder or do not, and welcomes all genders and ages.

Addiction is a disease, with a neurobiological basis.

Addiction is a psychiatric illness whose incubation would be the result of at least three sequential steps that interact with two factors which are the individual vulnerability and the degree/quantity of exposition to the drug or addictive behavior. The first step is the use sporadic or recreational as a learning process mediated by the overactivation of the neurobiological substrates of the natural reward system. This usage allows most of the people to perceive addictions as a highly rewarding stimuli. The second step, intensified use in which one the sequential cascade occurs in some vulnerable individuals who have a hyperactivated dopaminergic system and an alteration in the function of the prefrontal cortex. The prolonged and sustained usage induces sensitization to the incentive and an allostatic state which makes the addictive behavior strongly desired and needed. In homeostasis, the continuity and suitability of the medium is achieved through the stability while in the allosteric state is achieved by instability and change. The allostatic mechanisms are able to change within a certain instability, as biological buffers, so that the homeostatic systems remain stable. It is the achievement of balance in relation to constant change. Habit formation can also help to stabilize the sustainable use of the addiction.

The third step, the loss of control of the addictive practice that ends in addiction. This is due to a second phenotypic vulnerability that is triggered by long-term exposure and characterized by the lasting loss of synaptic plasticity in the reward areas of the brain. This loss induces a form of "behavioral crystallization" which is observed as a loss of control for addiction. The intake or addictive practice is not only desired and needed, but also pathologically painful when absent (abstinence syndrome)[43].

Addiction is a recurrent chronic disease characterized by the compulsion to seek, ingest or practice the addiction. The loss of control to limit the intake or inability to satisfy and the emergence of a negative emotional state such as dysphoria, anxiety and irritability that reflects a withdrawal syndrome, when access to drugs or addictive behavior is stopped.

Addiction has been conceptualized as a volitional disorder that involves the impulsiveness and compulsivity that produces an addictive cycle. This cycle is composed by three clinical phenomena which are impulsive intoxication, abstinence accompanied by a negative experience and experience of craving: concern/anticipation. Image studies reveal the circuits that measured the three state of the cycle addictive. For the stages of impulsive intoxication, the key elements that are involved are the ventral tegmental area and the ventral striatum. For abstinence and negative affective experience, the extended amygdala is involved. For the craving or the stage of concern/anticipation, a wide network involving like the orbitofrontal cortex, the dorsal striatum, the prefrontal cortex, basolateral amygdala, hippocampus and insula are involved. The disruption of the control inhibitory is observed in the cingulate gyrus, the dorsolateral prefrontal gyrus and the lower frontal cortex .

The transition to the addiction implies the neuroplasticity in all these structures that begin with changes in the mesolimbic dopaminergic system, a cascade of neuroadaptations from the ventral striatum to the dorsal striatum, and the orbitofrontal cortex. Finally, the dysregulation of the prefrontal cortex, the cingulate gyrus and the extended amygdala .

The delimitation of the neurocircuits involved in the evolutionary stages of the forms of the addiction syndrome, constitutes a heuristic base for the investigation of the molecular, genetic, neuropharmacological, and neuroadaptation. This concept is key in the understanding of the vulnerability, the development, and sustainability of the addiction. Vulnerability to drug abuse is related to the search for reward and impulsivity. These are two constructs that have their biological basis in the prefrontal cortex (PFC)[44].

On the prefrontal cortex and vulnerability for addictions it should be understood that there are monoamine and amino acid neurotransmitter systems located anatomically different sub regions. The medial prefrontal cortex (mPFC), lateral prefrontal cortex (LPFC), anterior cingulate cortex (ACC), and the orbitofrontal cortex (OFC) are the different sub-regions. There are complex interconnections and overlapping functions between these regions and each is thought to be involved in various functions related to health risk behaviors and vulnerability to abuse.

Among the various functions involved, current evidence suggests that mPFC is involved in the process of reward, care and re-establishment of drug use. LPFC is involved in decision making, behavioral inhibition, and is the door to attention. The ACC is involved in attention, emotional processing and self -monitoring. The OFC is involved in behavioral inhibition, the fixation of expected results and sensitivity to reward/ punishment. Some individual differences like age and

sex, influence the functioning of these regions, which in turn have an impact on vulnerability[45].

The adequate knowledge of all these variables guarantees the development of prevention and treatment strategies for substance abuse. The treatments must involve the inhibitory processes of the PFC with strategies and behaviors that can reduce the relative risk of behaviors related to consumption. They also include the design of effective public services, cognitive exercises, physical activity, training of control of feedback and pharmacological treatments[45].

On the other hand, in the Holistic Model Centered in the Family, Nizama propose the human developing integrated through multidimensional organization like axis of life comprising of eleven dimensions. These dimensions are body, genetic potential, personality, human essence, cognition, imagination, styles of life, active, image, futurity and posterity. The corporal dimension includes the physical aspect of the person. The genetic potential has weakness and strengths that were inherited from the paternal and maternal branches contained in the genetic box or zygote. The personality, temperament and character that modulate the way of personal being. The human essence are the guideline principles, the values of life, and the superior feelings. The cognition is the ability to learn, unlearn, relearn and innovate. The imagination is the creativity, and the art of reinvent yourself of "dying as I am for be reborn as I need to be". The lifestyles is the way of coping in everyday life. The assets are the genetic potentials converted into products, achievements, and results per share of the daily work. The image is the perception that others have about the person's actions. Futurity is the mental map of becoming that each person imagines. Posterity is the legacy that the individual brings after ceasing to exist. This original model proposes the cure of addiction and the main scenario of therapeutic work is the family and the home nest for human integral development in the period of 3 to 5 years, to achieve individual and family happiness[11,46,47].

CONCLUSION

Addiction is the medical specialty indicated for the successful and hopeful management of this volitional disease in all age groups, with committed and sustainable family adherence. Addiction is a chronic disease that requires medical treatment specialized to long term, with the objective of achieve the healing with integral human developing after several years of family and individual treatment. The temporary period that exceeds the limits of cycles of age of childhood and adolescence.

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Correspondence: *Martín Nizama-Valladolid*
Address: *Alfredo Salazar 314, Of. 303, Lima 27, Perú*
Phone: *(+511) 421-9939 Anexo 430 y 433 / +51 999-836040*
E-mail: *maniva@terra.com.pe*

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