

Understanding science in the service and care of mental health and disorders

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Abstract *Caring for mental health and mental disorders, from primary health attention, is a prime right. The objective of this study was to examine the testimonies of health attention services users regarding the assistance attitudes and practices. This was a hermeneutic qualitative study of several cases. Findings: It can be inferred that there exists a relative crisis in the feeble application of a public policy and in the capacity to encourage meaningful learnings in function of higher or lower potentials, linked to the construction of subjectivities. Conclusions: it is necessary to make a profound reflection on the mutation of meaning and the senses of the service and care of mental health and mental disorders, especially for the re-signification of the patient's human and psychoaffective domains in behalf of the actors involved in providing services from a comprehensive and systematic perspective. This should be encompassed with the pharmaceutical service in the intersectorial team, searching for an alternative cognitive training of the brain, as an endogenous substances generator, to strengthen the balance between the mind-emotions and the organic, in favor of the individual and social well-being, while maintaining the use of psychopharmacological drugs only when strictly necessary.*

Key words *Science, Pharmaceutical care, Mental health, Public health, Health promotion*

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Introduction

Nowadays, the conception of timely and benevolent health and mental alterations attention requires changes in the paradigm of every individual involved in Health Attention Services (HAS), as well as those authorities responsible for education, health, and justice. They need to build up heuristic knowledge related to the meaning and broad senses of the development of any possible dimensions in human beings, being the ontological dimension the one in charge of the instruction of complex mental processes, from cultural, political, economic, technological and environmental perspectives^{1,2}.

Moreover, they need to build social responsibility with a humanitarian sense. This may allow for them acquiring mental plasticity to reflect upon the ethical commitment of supplying timely care in health promotion to patients with neuropsychiatric disorders. Such care will help these patients to recuperate their well-being supported on both Primary Health Attention (PHA) as well as one beneficial health policy in favor of the patient's safety and sustainable wellness.

At local and global levels, it is imperative to train capable human talent in theoretical and practical knowledge in biomedical science, applied to philosophical, human, political, economic, social, cultural, technological and environmental aspects. Thereby, the human talent involved must advocate for training concerning changes in attitudes and attention practices for comprehensive care of mental health in HAS, which include other potential models for the well-being of the human being, especially in urgency services³⁻⁶.

The humanitarian crisis could be overcome by intervening the cultural, social, and solidarity obstacles imposed by the neoliberal political models on the actors involved. Moreover, actors who are highly interested in cutting-edge technologies to support complex networks use the Internet to capture patients within financial markets and impersonal communication before the health services teams.

The HAS should be served by staff who establish precise links between the patients and the institutions network for comprehensive health care and timely attention to mental disorders. Thus, they would be able to provide other forms of care as well as benevolent adjunct treatments, non-pharmacological, given the particularities of each case. The purpose of this is to raise awareness on the psychosocial variables (PSV), which

affect every human being in every specific context, as a public health issue linked to a humanitarian crisis.

Impersonal communication with patients must be overcome by means of renewing subjectivities in the meaning and senses of mental health, in which other preventive and alternative non-pharmacological treatments, in turn remaining lower in toxicity levels than synthetic psychopharmacological drugs. There are certain endogenous substances that balance the nervous transmission that determines harmony or establish an imbalance between the positive emotions (bliss, happiness, love, and solidarity) and the negative emotions (sadness, rage, pain, hatred, vengeance, and extreme poorness), concerning the mind and the emotions through acts.

Emotional imbalance influences the states of physical, social, mental, and environmental health; it also has incidence over stimulated behaviors (fast and reasoned), nuanced or slow in time, for every particular case. This would permit the search for homeostasis in the comprehensive mental state through a model or early and educational intervention. Here, it is important to consider the potential Adverse Drug Reaction (ADR) of psychopharmacological drugs, as there exist other alternatives in favor of the psychiatric patient's safety and benevolence.

Thereby, it is fundamental to formulate the most fit and comprehensive treatment to regulate the patient's vital energy as well as their psychological and affective states. The patient's mind must be trained to transform PSV challenges and their related hostility into opportunities, as they influence the complex health/illness process. It is also fundamental to adopt other permanent and practical attitudes for healthy life conducts that help the patient to intervene their own issue and its related problematic, which lead them to become resilient eventually by means of ludic, cognitive, and psychopedagogical techniques⁷⁻¹¹.

These aims require budget, optimal human talent, and sufficient organizational management within the worlds of controversy or conflict. This demands from scholars, as well as from the actors involved, agreements on common public and private interests. This may benefit human development in pursue of a harmonic, diverse, and just territorial economic progress¹²⁻¹⁵.

The study here reported makes a qualitative exploration that poses the need for raising awareness on the crisis of services and care of the comprehensive health attention and of mental disorders. This work addresses a perspective

concerning the daily practices in function of the social purposes within comprehensive health care promotion, which transcends boundaries by means of creating public policies on the basis of common and democratic agreements, adjusted to the population's unmet needs, and the differentiated analysis of the conception of well-being in different worldwide settings, attending the severity of the problem^{2,16,17}.

The purpose of this study was to examine the HAS from a perspective concerning the reach and limitations aforementioned. Two questions have been formulated:

¿What is the perception of users with mental disorders regarding the access to the HAS, the information received concerning their diagnosis, and the treatment actions promoted facing their mental state, as well as their satisfaction degree?
¿How do health professionals apply the definition of health and mental disorder under the ideals of a comprehensive treatment?

Methods

This was a hermeneutic qualitative exploration of cases, based on the testimony of HAS users in Medellín-Colombia, who presented a mental health disorder or a psychosocial difficulty that affected their emotional health. The objective was to examine the conception users of Health Provider Institutions (HPI) and Health Promotion Organization (HPO) had concerning the

service received. The following procedures were followed¹⁸⁻²⁰:

1) Documental review of the state of art on the last ten years of mental health and mental disorders attention in Medellín city.

2) Examination of 30 purposefully selected cases of mental disorder between 2011 and 2013; the cases were subjected to informed consent following proper ethical principles of confidentiality.

3) Data collection techniques included a semi-structured interview and one field diary.

4) An explanatory unit of analysis was created under the denomination "the ideals of attention services, as well as those of mental health and mental disorders care, in articulation with the services of urgency, home attention, and pharmaceutical service".

5) Data was analyzed using categories considering the following conceptual referents displayed in the Figure 1.

Findings

The following categories present the findings. The categories permitted to infer high frequency and relevance codes, from the perspective of the participants:

First: Access to the attention services for health and mental illnesses (ASHMI) is highly restricted and untimely. In most of the cases, this attention is given neither insufficient vulnerability value nor comprehensive attention, as it is giv-

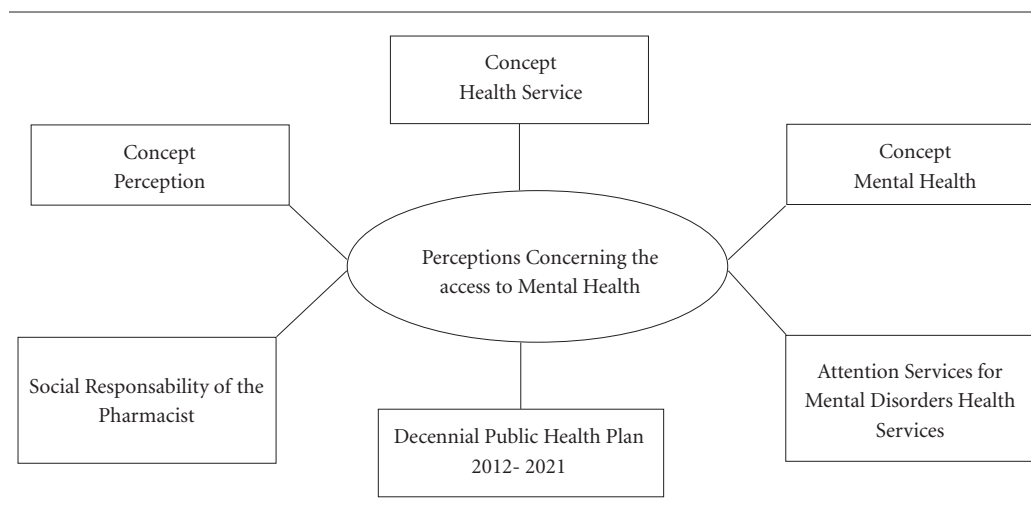


Figure 1. Conceptual referents as analysis categories.

en to other urgent or emergent organic alteration (cardiac arrest, brain stroke, among others), mainly at the urgency services and home points.

Second: 28 out of 30 participants stated that the HPIs and the HPOs did not provide systematic psychiatric and psychological assistance, in accordance with the patient's neuropsychiatric disorder. The participants pointed out that the medical doctor focused on the request of signing the informed consent, regardless of the patient's sufficient understanding of the information therein consigned. Without involving the family in the informed consent and its understanding, the medical doctor limits the prescription, in most cases, to either psychotropic drugs medicated for long periods of time, from six months up to ten years or individual psychological appointments (5 sessions in average). The participants also affirmed that the institutions infrastructure and the HPI and HPO services networks are insufficient in terms of psychiatric referral, psychological referral, or both; the participants also affirmed that the number of medical appointments were scarce or tardy, between one and four weeks upon request.

Third: The patients indicated that most HPIs and HPOs do not provide high cost medications for chronic treatments, except for the cases that are covered by the Mandatory Health Plan (MHP) of the General System of Social Security in Health (Sistema General de Seguridad Social en Salud (SGSSS)).

Fourth: The 30 cases have states that the health attention services do not attend the mental disorders at home, in any case possible. Two health professionals explained to the relatives that they do not have the adequate conditions, the integral training, or the sufficient skills to provide home services, even in critical cases, as in other forms of urgency.

Although some relatives, and even the patient, request openly the health attention services in some mental disorder episodes in critical conditions, it was found that three cases committed suicide, without having access to the right of ASHMI, facing the respective powerlessness situation of the relatives, who were guided to resort to official police services to transport the patient to the ASHMI.

Analysis and discussion

The findings obtained deserve our attention on the fact that the prime objective of comprehensive health from directly responsible authorities

(education, health, justice, students, professionals, communities, and pharmaceutical industry representatives) is nowadays on educating patients' dialectic episteme of resiliency, inclined towards principles and values, focused on the increase of mental plasticity for the know-how of the meaningful must-be, and centered in the human spirit in virtue of the social responsibility.

The analysis of findings indicates that all the actors involved should be more aware of the meanings of social responsibility with regard to the crisis in attention services for the care of mental health and illnesses. The actors should proceed in more timely manners as intersectorial teams. Likewise, the following reflections should help reflect upon actions to strengthen daily attitudes and practices of respect, promote recognition for the other, and promote the patient's safety and well-being²¹⁻²⁵:

1. Understand the inter-individual and intra-individual biological variability in a hostile environment with multifactorial origins, which induces mental alterations, imbalance in the organic-mental-emotional interrelation, and human suffering.

2. Within the framework of the Law of Art, professionals should be trained under a risk approach to diverse PSV, fostering the patient's health promotion from a profound change of behaviors and daily practices of the protective factors. This change is one challenge that must be achieved for a balance between the complex bio-psychosocial ecosystems of humans, who are immerse in mega-complex ecosystems that influence the different mechanisms of health access and illness development, as well as the forms of mental alterations, such as the enactment of illegal actions.

3. Within the biomedical, social and philosophical frameworks of health promotion, there must be a re-signification of the conceptual senses around the human being within multicultural transdisciplinary intersectorial teams, which may act as a route map to bridge the gap between theory and the daily practice.

4. The pharmaceutical professional, joined with the health team, has the social responsibility for accompanying the team and the patient during both the pharmacological therapy and the optimal alternative therapies agreed with the patient. This may contribute to the inspection, vigilance, and control of the drugs supply chain, which is a quality factor in affinity with security, efficacy, cost, and timely access to health care services and mental disorder.

5. The construction of a public policy that develops a set of ethic, theoretical-practical principles involving managers, academics, researchers and students.

It was found that, at the expense of less toxic alternatives, the most commonly used psychopharmacological drugs during critical and chronic states of mental alterations were: Fluoxetine, Sertraline, Imipramine, Lithium Carbonate, Haloperidol, Clozapine, Risperidone, Olanzapine, Diazepam, Alprazolam, Lorazepam, and Buspirone. These improve the health conditions. Nonetheless, they may also induce symptoms, signs of drug-induced illnesses, and even worsen the basal illness in certain cases.

The ADR probability depends on multiple risk factors (RF), which are interrelated as a pharmacoepidemiological triad for each human and are associated to the drug and the environment. This may positively or negatively affect any treatment for basal mental disorder as well as the mind-emotions-organism balance. Among the reported ARD (risk), there are²⁶⁻²⁸:

1. Frequent use of Fluoxetine and Olanzapine: In different cases, an unclear diagnosis for treating depression, anxiety, and psychosis may cause ADR of different severity degrees that could lead to arrhythmia, metabolic syndrome, and even affect the central nervous system (tremors, anxiety, manias, and paradoxical irritability/insomnia effects), or induce Serotonergic Syndrome. They may also induce severe clinical states in the patient, including excessive body temperature, muscular stiffness, changes in mental states and vital signs, and even death.

2. The use of Fluoxetine along with Tranylcypromine in patients with bipolar affective disorder, cause an interaction that exacerbates manic episodes and induce Serotonergic Syndrome.

3. The use of Fluoxetine along with other drug that acts upon the central nervous system (e.g. Haloperidol, APST, alcohol drinks, and Nicotine) increases the neurotoxic effects. Moreover, their simultaneous use with Propranolol and Metoprolol (anti-hypertension treatment) may increase eventual ADR, neurotoxic ADR, and cardiotoxic ADR of variable degrees.

4. Diazepam, Triazolam and Clonazepam cause neurotoxic effects in the limbic system disturbing these aspects: recent memory, will, attitude, conduct, and potent depression of the central nervous system. They produce physical and psychological pharmacological dependency. These exogenous psychopharmacological drugs, as well as the endogenous, drive slower or inhib-

it nervous transmission of the carrier substance that regulate the attitude towards a resilient behavior in the search for other paths for the transformation of realities.

The RF of the possible ADR, given the use of a self-medicated or prescribed psychopharmacological drug as a simple therapeutic regime, increases accordingly with the dose during time, in addition to the easy-to-get culture, which affects the balance between mind-emotions and the organic level of the patient. Any PstA modulates altered attitudes and conducts, supporting mental health re-gain.

On the other hand, any PstA affects the cognitive properties and the executive functions, among other brain functions. These mental disorders worsen due to their chronic use and keep the humans from controlling, planning, and organizing knowledge as well as improving their brain plasticity; these also keep individuals from adopting a virtuous cycle of healthy non-traditional conducts different to those related to the drug use for each symptom or clinical sign, which may become worse due to imprecise diagnosis prior to prescription.

The previous analysis permits to state the following reflections when the resort for treatment is the use of psychopharmacological drugs for long periods of time. This use must be carefully analyzed in the light of the *must-be* within the certainty of accurate diagnosis and epidemiological analyses of the drug chosen for prescription, which should be based on evidence of social impact indicators^{26-27,29-31}.

In reactive depression, using psychopharmacological drugs as a unique treatment option, regardless of the possible PsV that influence the particular environment, may become a symptomatic treatment and does not tackle the origin of the mental disorder. Since the action and effect of the PstA is to produce a delay or create an antagonistic reaction in the patient's conduct, in the cases examined in this study, for example, the withdrawal syndrome caused by psychotropics that intervene the mental disorder:

1) The primary goal of the public and private HAS should be that of offering comprehensive care to the most vulnerable communities, especially to those exposed to abandonment risks, hostile conditions, disability and social discrimination.

2) The characterization of the exclusion types made by the HAS, in terms of urgency and family, should be associated to the stigmatization and the impact's effects.

3) The network of services for health and mental disorders should have a degree of social responsibility with human sense, and be coordinated by highly trained and committed professionals.

4) The construction of an index set to measure the relationships between diverse PsV, the health, and the mental disorders from a context-based approach.

5) The utility/risk of the prescription, as well as its beneficial use at long term, should consider the following aspects.

First: Assays for most psychopharmacological drugs, which have seen growth in their effectiveness, are made in statistically non-representative world populations, which are controlled in conditions different to those for Colombian populations. Therefore, the resulting data do not correspond to the contextual conditions, if we consider pre-clinical evidence, clinical evidence, and minimal post-marketing safety.

Second: Most clinical studies on psychopharmacological drugs are developed by the pharmaceutical industry, which holds particular conflicts of interest within. These are the main information and most accessible educational sources for medical doctors, home physicians, and advertisers in communication means, being this last one either deregulated or uncontrolled by scholars.

Three: the information provided by the pharmaceutical industry highlights the beneficial properties of drugs, while the ADR and the drug-induced interactions with clinical impact are minimized (information bias). This is opposed to the stated in the Law of Art, regarding the correct use of PstAin accordance with a precise diagnosis and the prescription of other non-pharmacological alternatives.

Four: Some physicians present little willingness to provide psychoaffective support, psychosocial support for a persistent family, or an attitude towards non-referral of the patient to a psychologist or a social worker. One challenge here exposed is that of achieving comprehensive health services and prevention of mental disorders, considering the host family as well as the early promotion and construction of a personal/collective life plan.

Although it is well known that the alternative treatment has a slower effect on the changes in attitude and practices, this treatment may have more sustainable effects at long-term and lower ADR likeliness of neurotoxic, cardiotoxic, and hepatotoxic types. The non-curative and symptomatic use of any PstA implies a latent un-

certainty of either an idiosyncratic or an iatrogenic ADR, which may be non-severe or severe, depending on the multiple variables aforementioned.

From this perspective, it is assumed that a public bio-policy should overcome the health dilemmas in PHA within families and establish social support by means of ludic practices that stimulate both reactions and biological functions by means of neurotransmitters, hormones, and neuropeptides. These produce specific effects in the CNS of psychic and emotional orders, thus affecting the organism; these effects can be sluggishness, stimulation, or antagonism of the patient's mood inducing an unpredictable emotional conduct in their individual or collective life, which also depends on the physiopathology of each human being and the psychosocial variables^{12,13,18,23,32-34}.

The endogenous substances are mainly of two kinds: 1) Adrenaline, Noradrenaline, Dopamine, and Glutamic Acid (stimulating endogenous neurotransmitters); 2) L-Glutamate is the main excitatory neurotransmitter of the CNV, while Glutamine sets off the stimulation of energy and mediates the regulation of the Glutamic Acid's activity. They generate active behaviors and strong emotional reactions (speed of mental processing and language), which leads the individual to gaining awareness, attentiveness, and complex coordinated movements.

The Acetylcholine affects the excitement, the memory, the learning, and the motor coordination activity. It is related to the neurological origin of pathologies such as Parkinson, Huntington Korea, and Alzheimer.

The Serotonine, the gamma-Aminobutyric Acid (GABA), and the Glycine are inhibiting neurotransmitters of the physio-pathological functions.

The Histamine acts as a neurotransmitter, or autacoid, whose histaminergic neurons that remain active during night hours, depending on the type of receptor, may stimulate or inhibit the CNV or the peripheral nervous system in the stomach (Secretin cells), skin, lungs, or muscles.

Also, hormones such as estrogens, progesterones, androgens (sexual hormones), Cortisol, Insulin (suprarenal hormones), as well as Thyroxin and Melatonin (circulating hormones) participate in the regulation of mental activities. The secretion of Melatonin depends on the lower light intensity at night and regulates the biological clock, or circadian rhythm, which influences the effects of the pharmacological treatment.

The organism also has endogenous neuropeptides, similar to Diazepam and the Endorphins, which intervene in the mediation of GABA reactions in the CNV modulating the relaxation, rest, and well-being mechanisms of the non-pharmacological alternative treatments. The neuropeptides (endorphins, autacoids, and P-substance) are vital, in certain quantities, to modulate and regulate the emotional, biochemical, physiological, and pathological balances^{12,35,36}.

The endogenous substances may be stimulated or antagonized by multiple factors of endogenous and exogenous origin, such as PsV and PstA, which modulates in certain cases the feedback between hormonal axes, from the hypothalamus to the hypophysis, the testicles, or the suprarenal gland. This generates a chain reaction of endogenous biochemical interactions of complex nature, whose subsequent action can be favorable or unfavorable, from the CNV to the sympathetic and parasympathetic autonomic systems, and then to the peripheral nervous system.

This highly complex nervous network establishes intercommunication with brain areas of the amygdala, the brain cortex, the pre-frontal lobe, and the limbic system. They are particular to the clinical state of every human being and are involved in the defense mechanisms, as well as in the organized or disorganized emotional behavior. Likewise, it has incidence over the neuro-psycho-endocrine-immunological reactions, which affect the physio-pathological, neurological, and neuropsychiatric states of the human being.

Neuroscience progresses towards research on natural homeostasis, which constitutes a chance to strengthen a unique human being based on neuro-psycho-endocrine-immunological sciences, thus determining the dynamic, triadic mind-emotions-organism interrelations. This natural homeostasis in human beings allows them to develop capabilities and skills to contribute to the continuous transformation of the psychoaffective, sociocultural, and psychosocial realities in given contexts and circumstances.

Neuroscience also postulates the development of alternative cognitive treatments that contribute to the expansion of thinking in order for the patient understand the individual features of the health state and the mental disorder state, given particular social problems in each context; thus, the individual will be able to transform these problems into positive forms of acting and thinking, which help them evolve critical subsistence situations with life quality.

Health alternative from artistic and ludic perspectives, such as leisure, free time, and recre-

ation, strengthen brain plasticity for the self-care and well-being of the patient with mental disorders. This can be achieved by means of systematic and comprehensive psychoaffective and psychosocial care and alternative treatments focused on human renewal. This will allow for the patient to understand the complexity of human psyche, as linked to the realities, and then they will seek for meeting their ontological, sociocultural, economic, political, psychoaffective, technological, and environmental needs^{12,34-36}.

The implementation of alternative treatments as an education and health public policy may sensitize actors and raise their awareness in terms of the intersectorial and social responsibility for training a new generation of professionals with a different form of thinking upon the care and well-being of patients with mental disorders; this can be a reflection understood thanks to four fundamental strands:

First: The curriculum from the family, passing through the years of schooling, up to higher education, especially in health-related areas.

Second: The organizational climate of open communication in any educational and health institution each human belongs in.

Third: The ethics and the comprehensive managements of academic, research, and managerial fields so as to promote comprehensive health education in every actor involved: family, health professionals, researchers, scholars, governmental legislators in the health domain, educators, justice agents, and the pharmaceutical industry.

The questions posed by the study have shown answers displaying a negative trend, rather than positive. Indeed, more inquiries have emerged regarding the attention to health and mental disorders, safety, better quality life standards of the patient, and the collective well-being. These questions should be addressed by future research studies at intersectorial level, considering the study of diagnostics in Medellín city, Colombia and the world. These questions may include:

- To what extent is the public force better trained for the transport of mental disorder patients than comprehensive health professionals or auxiliary staff?
- Do the health services offered by the neoliberal economic and political model to individuals with the need of urgent comprehensive health services are coherent with the discourse and practices of political leaders?
- Is it possible to drive a profound reflection among governmental entities in education and justice domains to develop a public bio-pol-

icy enacted in the everyday academic and professional knowhow?

- What is the impact of education in the comprehensive professional growth of psychiatry students and other health professionals with regard to their social functions?

- What capabilities and skills in the *know-how of the must-be* are students and professionals in the fields of health and mental disorders developing?

- How do universities promote the comprehensive, sustainable, diverse, and equitable human development, as the pillar of curricular programs?

- What type of academic education in leadership, public biopolitics, social reality, culture, environment, and values is offered to students and professionals in universities, HPOs, and HPIs?

Conclusions

This research casts reflection on the imperative urgency for re-structuring the General System of Social Security in Health and the ASHMI. They require timely and coordinated actions from the responsible agents, along with the construction of an educational system of higher quality learnings focused on the primacy of human meaning.

Testimonies of this study's participants allow us to infer that the crisis in services and care for the attention of health and mental disorders is associated to a low level of social responsibility commitment on behalf of every actor involved in the education and growth of the human being, since babyhood, through the first even years of life, up to every school visited by them. These constitute determinant stages for the positive development of a different renovating generation (human re-engineering), one generation that forges a new culture of healthy life conducts in their immediate ambient and in the environment.

There exists a challenge and a chance to implement a public bio-policy that helps satisfy human needs, particular to the global humanitarian crisis. This can be achieved through model actions and procedures of preventive, holistic, and systematic nature, which foster the mentally-ill patient's self-care, care, well-being, and safety. This is a critical challenge in public health for the PHA in families, and especially for populations in critical life conditions of violence, for instance.

As a recommendation, the joint need to prevent exogenous RF that cause mental disorders of multidimensional impact in the most vulnerable populations. In many cases, the cognitive alternatives in accordance with the Law of Art could be more favorable than the psychopharmacological treatment, considering that "the brain has such enormous forces, such reserves of fine links and associations of nervous cells with world phenomena; the brain is so rich and plastic that no man, even at the age of 100 years, might use optimally half of the conditioned reflects nature has endowed us with".

This study pointed out at inequities and few opportunities in the ASHMI nowadays. This is a determining factor that justifies the construction of a new bio-political model of learnings that avoids RFs (negative effects) and promotes the PFs (by improving the patient's life conditions) through educational stimuli and comprehensive ludic training since birth, either in positive (self-care and health care) or negative (illness) ways.

We must highlight that there exists a sense of harmony between mind-emotions-organism, education, and comprehensive training. Nonetheless, there is a perception of the reality in which few attitudes and daily practices for health promotion and comprehensive, sustainable intervention are oriented towards achieving homeostasis of living beings, which in turn supports the evolution of structural causes of the unsatisfied needs in human beings and in communities.

Collaborations

FAT Marulanda and CDL Arroyave participated equally in all stages of preparation of the article.

References

1. Max-Neef M. *Desarrollo a escala Humana: una opción para el futuro*. Medellín: Edita y Distribuye Proyecto 20 Editores; 2000.
2. Rojas F. Determinantes sociales de la salud y la acción política. *Humanidades Médicas* 2013; 13(2):279-291.
3. Franco Z. *Desarrollo Humano y de Valores para la salud*. 2ª ed. Manizales: Editorial Universidad de Caldas, Colombia; 2004.
4. Franco Z. *La evaluación ética en la educación para el Desarrollo Humano*. Manizales: Universidad de Caldas, Colombia; 2006.
5. Suárez R. *Educación. Condición de humanización*. Manizales: Universidad de Caldas-Colombia; 2008.
6. World Health Organization (WHO). *Integrating of Mental Health into Primary Care. A Global Perspective*. Melbourne: WHO; 2008. [consultado 2015 Nov 5]. Disponible en: <http://www.who.int/bookorders/anglais/detart1.jsp?sesslan=1&codlan=1&codcol=15&codch=739#>
7. República de Colombia. Consejo Nacional de Política Económica y Social (CONPES) *Política Farmacéutica Nacional*. Bogotá: CONPES y Departamento Nacional de Planeación; 2012. [consultado 2015 Abr 17]. Disponible en: <http://www.minsalud.gov.co/Politicac%20Farmaceuticas/Pol%C3%ADtica%20farmac%C3%A9utica/Documentos%20soporte/23042012%20CONPES%20POLIITCA%20FARMACEUTICA%20PROYECTO.pdf>
8. Vázquez J. El modelo de intervención temprana en la enfermedad mental. *El Médico Interactivo Diario Electrónico de la Sanidad Interpsiquis*; 2009. [consultado 2014 Mar 1]. Disponible en: <http://www.psiquiatria.com/congreso/2009/adicciones/articulos/38015/>
9. Kohn R. Los trastornos mentales en América Latina y el Caribe: asunto prioritario para la salud pública. *Rev Panamericana Salud Pública* 2005; 18(4/5):229-240.
10. Tobón F, González C. Percepciones de usuarios del Programa de Salud de la Universidad de Antioquia sobre el servicio de atención en salud mental. *Rev Lectiva Asociación de profesores de la Universidad de Antioquia, Colombia* 2009; 18:59-70.
11. World Health Organizations (WHO). *Countries in Action for Mental Health*. Ginebra: WHO; 2009. [consultado 2014 Mar 1]. Disponible en: http://www.who.int/mental_health/policy/country/en/index.html
12. Zehentbauer J. *Drogas Endógenas. Las drogas que produce nuestro cerebro*. Barcelona: Ediciones Obelisco; 1995.
13. Londoño J, Frenk J. Structured pluralism towards an innovative and innovative model for health system reform in Latin America health Policy. *Health Policy* 1997; 41(1):1-36.
14. Sáinz F, Talarn A. Prevención cuaternaria en salud mental. [consultado 2016 Ene 28]. Disponible en: http://intercanvis.es/pdf/23/23_art_08.pdf
15. Albuquerque T, Pereira R, Amaral J. Perspectivas e desafios da “nova” Política Nacional de Promoção da Saúde: para qual arena política aponta a gestão? *Cien Saude Colet* 2016; 21(6):695-1706.

16. Torres Y, Posada J, Mejía R, Barreño J, Sierra G, Montoya L, Martínez AA. *Primer estudio de salud mental Medellín-Colombia, 2011-2012*. Secretaria de Salud Medellín-Grupo Salud Mental Universidad CES: L Vieco e Hijas Ltda; 2012.
17. Tobón F, Gaviria N, Ramírez J. La lúdica como método psicopedagógico: una experiencia para prevenir la farmacodependencia en jóvenes. *Avances en Psicología Latinoamericana* 2012; 30(1):81-92.
18. Bonilla E, Rodríguez S. El proceso de investigación cualitativa. In: *Más allá del dilema de los métodos*. Bogotá: Editorial Norma; 1997. p. 119-145.
19. Moustakas C. *Phenomenological research methods*. London: Sage publications; 1994.
20. Nussbaum M. *Crear capacidades. Propuesta para el desarrollo humano*. Barcelona: Editorial Paidós; 2012.
21. Ardila S. La salud mental a la luz de la Constitución colombiana: análisis de algunas sentencias de la Corte Constitucional 1992-2009. *Rev Colomb Psiquiat* 2010; 39(3):492-509.
22. Le Tourneau P, López M, Bello D, Ballesteros J, Carillo R, Cesano J. *Tratado de responsabilidad médica: responsabilidad civil, penal y hospitalaria. Deber de actuación diligente (Lex Artis)*. Buenos Aires: Legis Argentina; 2007.
23. Arias B. Salud mental y violencia política. Atender al enfermo psiquiátrico o reconocer al sujeto de la micropolítica. *Rev Colomb Psiquiat* 2013; 42(3):276-282.
24. Chetley A. *Medicamentos problema*. Saarbrücken: Acción internacional por la salud. América Latina y el caribe-Europa; 1995.
25. Appiani F. *Efectos adversos y seguridad de psicofármacos*. Buenos Aires: Editorial Librería Akadia; 2009.
26. Asociación Colombiana de Neurología. *Neurotoxicología*. Bogotá: Editorial Producción Exlibris Editores S.A.; 2001.
27. Carvalho J. *Acerca del riesgo: para comprender la epidemiología*. Buenos Aires: Lugar Editorial; 2005.
28. Barroso J, León M. Funciones ejecutivas: control, planificación y organización del conocimiento. *Rev Psicol y Aplic* 2002; 55(1):27-44.
29. Rang H, Dale M, Ritter J. El sistema nervioso. En: *Farmacología*. 5ª ed. Madrid: Editorial Elsevier; 2004. p. 496-552.
30. Grup D'ètica Societat Catalana de Medicina Familiar I Comunitaria. La ética en la relación con la industria farmacéutica. Encuesta de opinión a médicos de familia en Cataluña". *Atención Primaria* 2004; 34(1):6-14.
31. Tobón F, López L, Ramírez J. Acompañamiento psicosocial a jóvenes marginados para prevención de la farmacodependencia. *Humanidades Médicas* 2013; 13(2):348-371.
32. Tobón F, Mejía M, Gutiérrez P. *Un mundo Mejor es Posible. Educación humanista hacia la búsqueda del ser humano en la Atención Farmacéutica y en la ciudadanía*. Saarbrücken: Editorial Académica Española; 2012.
33. González C, Paniagua R. Las problemáticas psicosociales en Medellín: una reflexión desde las experiencias institucionales. *Rev. Fac. Nac. Salud Pública* 2009; 27(1):26-31.
34. Belmonte M. Emociones y cerebro. *Rev. R. Acad. Cienc. Exact. Fis. Nat.* 2007; 101(1):59-68.
35. Girona L, Rovira J, Homedes N, editores. *Federación de Asociaciones para la defensa de la salud pública*. Barcelona: Icaria editorial; 2009.
36. Ruales, J. Tendencias en servicios de salud y modelos de atención en salud. *Rev. Fac. Nac. Salud Pública* 2004; 22(n. esp.):33-39.

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