

The Poverty under the light of the Neurosciences

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Introduction

As the economic crisis continues all over the world¹ and the distance between financial inequalities, the 'rich-poor gap', that varies considerably across countries, increases constantly, the dimensions of the problem of situational poverty are also augmented in the increasingly globalizing society of our Era.²

Although the alleviation of the financial crisis remains a core issue in the social and humanitarian policy of all countries, the poverty is consistently ascending, affecting the psychosocial homeostasis of millions of people, exerting serious long-term effects on personal and social well-being, given that it is a main contributor to many serious social and legal problems.

In most countries, which are members of the European Union (EU) the definition of poverty sets as critical poverty threshold the 50 or 60 per cent of median national income.³⁻⁶ Consequently, although the stages of the poverty for persons or families are related to the financial status of the society or the country in which they live, however the poverty is mostly conceptualized on the basis of the minimum acceptable living standard, which is approved by society.⁷

In some of the critical stages of the human life, such as in childhood, the poverty is mostly associated with serious physical, psychological, emotional and educational problems,⁸ which may exercise a somber influence upon the quality of their life.⁹ In the advanced age also, in senility particularly, the burden of poverty is critical for the character of life's epilogue.

It is expectable that poverty induces a long chain of stressful conditions upon the suffering communities or persons, with serious physiological effects on children and elderly people, affecting the personal emotional stability and the harmony of interpersonal communication in the family and the work environments, with long-lasting consequences on the physical, mental and social health, embarrassing the social-emotional development of the persons.¹⁰⁻¹³ Thus the poverty was associated in a high proportion of societies with powerlessness, unstable manual labor, psychological or mental instability, low educational levels and social and legal problems.

Poverty and mental health

There are multiple potential links between low economic incomes, deprivation and health status. Poverty and unemployment may be considered as potential risk factors for mental disorders according to WHO,¹⁴ since higher incidence of mental morbidity, associated with mortality and physical or intellectual disability has been reported in low income communities than in prosperous ones.¹⁵⁻¹⁹

It has been reported that the nonpsychotic psychiatric morbidity, that is mostly constituted by the feeling of anxiety, frustration, depression, social insecurity and psychosomatic phenomena are mainly prevalent among people who live under the condition of poverty and material deprivation^{20,21} and face serious humanitarian problems and emotional distress.^{22,23} In addition, the persistent

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generational poverty in association with the psychological or mental distress affects the capacity of the person to re-integrate into society by building supportive social relationships or by participating in productive activities,²⁴ a phenomenon that is mostly common in communities of low-income countries, where mental illness and poverty interact in a vicious circle.

From the psychological point of view, long lasting poverty induces, as a rule, the sense of insecurity, helplessness and humiliation, increasing therefor the despair and the further social isolation of the individual,²⁵ given that each additional year in poverty increases the deprivation and makes the possibility of recovery obscure and scarcely achievable.

Effects on woman's mental health

Although poverty has negative mental health consequences for both men and women, greater mental phenomena are observed in women than in men. Women who live under serious financially strained circumstances, particularly single parent women and widows having all the economic and social responsibilities of the family face chronic stressful experiences continuously, which are mostly associated with inadequate incomes, neighborhood insecurity, without any substantial support from friends, relatives, church or society. Under those unhappy circumstances they may suffer from anxiety and depression more frequently than other women.^{26,27}

Effects on child's mental health

The consequences of poverty²⁸ and parental mental health seems to affect the children and adolescents considerably, since depression, anxiety, low cognitive performance, attention deficit/hyperactivity disorder, panic reactions, eating disorders such as anorexia nervosa, personality disorders, anti-social, aggressive and impulsive behaviour, increased risk of tobacco, cannabis,²⁹ drug and alcohol use, school dropout and negative peer group affiliations, as well as involvement with the legal system are more pronounced in children and adolescents of poor or low income families, with mentally ill parents, than in children who live under better socioeconomic conditions in a healthy parental environment.

Effects on adolescent's mental health

In addition, adolescence, which is a crucial stage of major life transition, characterized by obvious sensitivity in social adjustment, creates vulnerability in noxious environmental and social factors, that is mostly accentuated by poverty, frequently resulting in serious and persistent psychological youth problems, that may further affect their homeostatic equilibriums in adulthood.³⁰

Reasonably, parental suicide, depression, posttraumatic stress disorder (PTSD), alcoholism,³¹ violence,³² insufficient interactions with their children or ineffective parenting, poor cognitive stimulation, marriage instability, which are frequently associated with unemployment, leading to absolute poverty or serious material deprivation, all of them are tragic phenomena that have catastrophic consequences on children's mental health.³³

As a matter of fact, the poverty frequently affects both physical and mental health of the children, since the low socioeconomic status has serious consequences upon the parental health care, the housing quality, the marital stability, the nutrition adequacy of the children, the medical care and the pediatric following up³⁴ and overall the children live, as a rule under a stressful psychological atmosphere and have marked deficiencies in learning. It was observed that maternal physical illness has slighter gravity for children's mental health than the maternal mental health disorders.³⁵

Phenomena in immigrants

It is important that in cases of immigration, although immigrant families live usually in poorer conditions than the host country counterparts³⁶ or sometimes in deep poverty, the children, the girls particularly, are not mentally affected. In the large majority of families who adapt successfully to their new environments, the children perform sufficiently at school, outperforming their indigenous classmates frequently.^{37,38} Nevertheless in some immigrant families who stay poor for long, socializing mostly with their poor native counterparts, the children remain helpless, isolated, having less exposure to the world due to lack of knowledge, language fluency and adequate vocabulary. Most of them have low self-esteem, feel powerless, unsafe, living under lasting condition of psychologically withdrawal,³⁷ violence, fear, distrust and social disengagement.³⁹

It is important that efforts to alleviate poverty promptly protect families from negative socio-economic consequences affecting the social behavior of the children.⁴⁰ The amelioration of the financial and social status of the family would exercise a positive effect on the mental and psychological health of the family⁴¹ and would be a crucial component of children's emotional stability and mental health.⁴²⁻⁴⁴

A prompt escape from the labyrinth of the poverty have been linked to marked declines in children psychological problems.⁴⁵ Otherwise, persisting mental health problems in childhood would become longstanding and difficult to be treated in adulthood.

In case of massive immigration, the application of beneficial programs in order to alleviating immigrant family's poverty, ameliorating the conditions of life, creating job training programs and providing job access to parents, would greatly increase the perspectives of children's mental health, as well as their dignity and social prosperity.^{46,47} Pastoral care may also contribute greatly in providing counseling, psychological and spiritual support and proper education⁴⁸ and even housing to homeless population.

Poverty and brain development

It is important that poverty may have a negative impact on brain development, affecting probably the organization and the plasticity of neuronal networks^{49,50} in areas of the brain associated with working memory, attentional processes, inhibitory control, emotion and behavior, such as hippocampus, amygdala, temporal, frontal cortex and cerebellum.⁵¹⁻⁵³

Developmental cognitive neuroscience research has found that both gray and white matter are vulnerable to environmental disharmonic conditions.⁵⁴ Even early studies in the field of neuroscience attempted to clarify whether the effects of exposure to deprived environments, might modify the morphological harmony of the brain's cytoarchitecture in experimental animals.⁵⁵

Clinical studies revealed that children who were grown under conditions of nutritional deprivation and psychological distress showed smaller hippocampus and amygdala in neuroimaging, in comparison with children who lived under sufficient nutritional and psychological conditions.^{56,57} The advances in neuroimaging later on enabled the analysis of neural networks in studies focused on the influence of poverty on brain development.⁵⁸ A substantial body of evidence from those studies suggested that poverty has a negative effect on the gray matter of the hippocampus and the frontal lobe at early childhood,⁵⁹ resulting in memory impairment and emotional instability, affecting the learning capacity and the social performance of the children and deteriorating their quality of life evidently.⁶⁰

The frontal lobe also, which is an area of executive functions, planning, attention, self-control, emotional and impulse control as well as harmonious social performance would be particularly vulnerable to noxious effects of stressful experience in childhood, affecting its development, as well as the neuronal plasticity, the dendritic arborization and the synaptogenesis. Persistent poverty in childhood affects also the organization of specific functional areas of the cortex of the temporal and parietal lobes, the cerebellar cortex and the cytoarchitecture of subcortical structures.^{61,62} Consequently morphological or functional alterations in the frontal lobe may be related with learning difficulties, decrements in attentional processes and behavioral problems seen in children from families who live in poverty.^{63,64}

These findings from the clinical and experimental research in the field of neurosciences, emphasize the importance of the professional caregiving and sufficient education to children of poor families that should be a specific target for the welfare programs of the society. In general, a core concern of the welfare by church or the society must be the prompt offer of efficient assistance and support to any impoverished family or citizen.

Voluntary poverty

Voluntary poverty is the bright face of poverty, which is too different from the generational, situational or relative type of poverty. From the Greek antiquity philosophers emphasized the value of the spiritual wealth and considered the material poverty as a way to purity and spiritual perfectionism. According to Heraclitus, one of the greatest Ionian philosophers who lived in solitude and poverty, "a prosperous society can only be conceived as one in which people have the capability and the strength to live in noble simplicity, in honesty, in purity, in light, overpassing the economic crisis by the strength of the mind".⁶⁵

The prosperity of the society is mainly based on spiritual values, the wisdom, the truth, the illumination of the mind, the brightness of the soul, the capacity to self-knowing and sound thinking, the honesty, the purity, the prudence and the unapparent harmony of the interior life.⁶⁶ All people ought to know themselves, being even-minded, since all humans have the capacity to self-knowing and sound thinking. Wisdom is the oneness of mind that guides and permeates all things.

The Stoics⁶⁷ and Neoplatonics,⁶⁸ believed also that the man should live in poverty and simplicity focusing their activity almost exclusively on meditation, mental purity and spiritual perfection. Plotinus, who himself use to live in poverty, proclaimed the eventual victory of the spirit over the flesh. The human being is a spiritual entity employing a body, as an active instrument of its temporal terrestrial life. A person can behave by acting solely intellectually and the soul must be continuously elevated towards the absolute Goodness, escaping from the tragic narrow cage of the perishable body.⁶⁹

According to Anaxagoras the human being has to live in simplicity, poverty, self-concentration, self-control endeavoring to understand deeply the power of the Mind (Νοῦς), who is unique, original, eternal, authentic, autonomous, unlimited unmixed with anything else, remaining pure and alone itself by itself, self-powered, self-subsistent, self-sufficient, separated completely from all other elements.⁷⁰

In the range of the existential philosophy, according to Kierkegaard, the human being is an existing infinite Spirit⁷¹ and Mind. Thinking and understanding, may have either an aesthetic-intellectual character or an ethico-religious one, depending on the intelligence, wisdom, spiritual culture and mind's elevation of the human being.⁷²

For centuries many philosophers decided to live in poverty and solitude endeavoring to contemplate the serenity and the inner harmony,⁷³ fighting against the passions of the soul,^{74,75} searching for the existential authenticity and the real way to the truth,^{76,77} beyond the turbulence of the society, the contradictions, the hard competitions, the hostility, the materialistic eudemonism, the economic discrepancies,⁷⁸ the politics and the social dispute under various political theories and dominant tendencies.⁷⁹

In the practice of religious life, the concept of purification and spiritual elevation by living in solitude without any possession has dignified voluntary poverty as a way of sanctification. Thus many persons⁸⁰ for centuries gave up all their possessions in order to pass an ascetic way of life in continuous prayer and deep repentance⁸¹ living in voluntary poverty inside cells, sketes and monasteries.

In those ascetic establishments, which were founded in many parts of the world men and women devoted their time to praying and worshiping unceasingly, leading a high spiritual life and offering excellent writings,⁸² proofs of inner peace and harmony, faith, contemplation, serenity, purity of the heart and sanctity, which are precious documents of religious psychology and philosophy of a substantial psychotherapeutic validity.^{83,84}

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None.

Conflicts of interest

The authors declare no conflicts of interest.

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