BRAIN. Broad Research in Artificial Intelligence and Neuroscience

ISSN: 2068-0473 | e-ISSN: 2067-3957

Covered in: Web of Science (WOS); PubMed.gov; IndexCopernicus; The Linguist List; Google Academic; Ulrichs; getCITED; Genamics JournalSeek; J-Gate; SHERPA/RoMEO; Dayang Journal System; Public Knowledge Project; BIUM; NewJour; ArticleReach Direct; Link+; CSB; CiteSeerX; Socolar; KVK; WorldCat; CrossRef; Ideas RePeC; Econpapers; Socionet.

2022, Volume 13, Issue 2, pages: 191-210 | https://doi.org/10.18662/brain/13.2/339 Submitted: January 23rd, 2022 | Accepted for publication: February 24th, 2022

Neuropsychological and Personality Development of Adolescents with Depressive Disorders

Nelia BIHUN¹, Tetiana PASHKO², Yuliia DANCHUK³, Tamara KRYVONIS⁴, Siagha SAMI⁵, Nataliia IVANIKIV⁶

- ¹ National Pedagogical Dragomanov University, Ukraine, <u>nelabigun@gmail.com</u>, <u>https://orcid.org/0000-0002-1767-5181</u>
- ² Luhansk Taras Shevchenko National University, Ukraine, tatjana.pashko@gmail.com, https://orcid.org/0000-0002-2746-6471
- ³ Kamyanets-Podilsky Ivan Ogienko National University, Ukraine, <u>Uliyadancuk@gmail.com</u>, https://orcid.org/0000-0001-5576-9923
- ⁴ Natoinal Pirogov Memorial Medical University, Ukraine, <u>tamarakr@ukr.net</u>, https://orcid.org/0000-0001-6060-7152
- ⁵ Ternopil Volodymyr Hnatiuk National Pedagogical University, Ukraine, seagasemi@gmail.com, https://orcid.org/0000-0002-2082-6833
- ⁶ Drohobych Ivan Franko State Pedagogical University, Ukraine, <u>ivnatalija@ukr.net</u>, <u>https://orcid.org/0000-0002-1475-9507</u>

Abstract: The article provides a theoretical and methodological analysis of the neuropsychological and personality development of adolescents with depressive disorders. The equal role of biological and psychological factors in the development of adolescent depression is emphasized. The neuropsychological symptom complex of depressive disorders in adolescence is considered. The emotional and motivational features of personal development in the context of adolescent neurodevelopment are analyzed. We have noted strong mutual influences of neuropsychological and personal development of an adolescent; neurobormonal mechanisms of child behavior; connection of neuropsychological mechanisms of depressive disorders of psychogenic origin and character accentuations of asthenic, hypotensive, hysteroid type; propensity of teenagers to reactive depression with sensitive and labile character accentuations. To effectively prevent suicides, neuropsychocorrection of mental states in adolescents and implementation of a sociopsychological program for their personal development, and timely diagnosis of symptoms of depression and psychotherapeutic intervention have been proposed. A program for the development of emotional self-regulation in adolescents with depressive disorders and neuropsychological correction of their depressive states has been developed. A preventive and psycho-corrective program for expanding internal resources, reducing the risk of suicidal tendencies and overcoming depressive disorders in an adolescent, taking into account neuropsychological and personal developmental features of adolescence, has been proposed.

Keywords: Suicidal behavior, character accentuations, psychopathies, psychotraumatic situations, depressive states, nervous system, adolescent crisis.

How to cite: Bihun, N., Pashko, T., Danchuk, Y., Kryvonis, T., Sami, S., & Ivanikiv, N. (2022). Neuropsychological and Personality Development of Adolescents with Depressive Disorders. *BRAIN. Broad Research in Artificial Intelligence and Neuroscience*, *13*(2), 191-210. https://doi.org/10.18662/brain/13.2/339

Introduction

Neuropsychological development of the personality of an adolescent with depressive states is connected with the socio-biological psychological factor and the child's emotional response to psychological traumas, unstable family situation (Apostu, 2016) with an appropriate style of parenting and social situations with inadequate - overstated or inadequate expectations, needs and resources. External threat from the outside world with a lack of love and acceptance, care and understanding from adults and internal loneliness and vulnerability, excessive maximalism and sensitivity to injustice are dangerous for the transition period of adolescence social and psychological conditions of deprivation of his actual needs and psychological conditions of the personality of the teenager. Mildly depressive emotional states are often experienced indirectly by adolescents, as they successfully conceal emotions of sadness, loneliness, insecurity about growing up, boredom, apathetic attitudes toward the world and people under a mask of aggressiveness, hypochondria, antisocial behavior, and inadequate social situations. Sometimes taking a teenager's side completely, psychologically protecting him or her, is the most effective prevention of depression. However, psychotraumas, individuality in the interaction of the child and adults with insufficient internal resources for psychological adaptation, neuropsychological and socio-psychological characteristics lead to escalation of depression and transform the associated psychophysiological and neural processes into actually irreversible ones. In this regard, the study of the neuropsychological and personality development of adolescents with depressive disorders on the background of cognitive, behavioral-anxietyhysterical, aggressive, and hypochondriac properties that accompany adolescent psychological development disorders is an extremely relevant problem neuroscience, developmental psychology, neuropsychocorrection (Berbets et al., 2021; Sarancha et al., 2021; Demchenko et al., 2021).

The purposes of the article - to carry out theoretical and methodological analysis of neuropsychological and personal development of teenagers with depressive disorders and to offer psychoprophylactic and corrective measures for depressive states in adolescence. Novelty and practical significance of the article consists in deepening of scientific ideas about features of personal development of the child during puberty period and neuropsychological mechanisms of depressive disorders in an adolescent

and mutual influence of neuropsychological and personal aspects of puberty. The results of the study are valuable for a generalizing scientific view of the manifestation of depression in adolescents, the content-dynamic structure of his personality and features of neuropsychological development; the use of psychotherapeutic and neuropsychocorrective techniques to reduce the activation of depressive states at the psychophysiological, emotional-cognitive and behavioral, social and psychological and personal levels. The results of the study can be used in clinical practice with depressed adolescents.

Theoretical and methodological analysis of peculiarities of neuropsychological development of the personality of an adolescent with depressive disorders

Psychogenic depressive disorders, the causes of which are stressful situations, are predominantly characteristic of adolescence. The psychological mechanisms of emotional intelligence are not yet sufficiently formed, so it is difficult for teenagers to understand and even name their emotional experiences, which often leads to perceptive mistakes in their understanding by adults. Feelings of inner emptiness and loneliness, resentment and self-blame may be connected with the instability of self-esteem in assessing one's own adulthood, unjustified expectations of the possibilities of acting as an adult (childhood for a teenager seems to have ended, but adulthood has not yet arrived, which is accompanied by sadness over the lost part of oneself on the physical, social and emotional levels).

Negativism towards the surrounding teenagers causes external conflicts, and the threat of punishment, fear and anxiety simultaneously with the need to cooperate with it as an adult cause neurotic states and internal conflicts. Besides, "right-hemispheric" adolescents as the least stress-resistant along with considerable nervous and mental strain can experience social pressure of misunderstanding from the environment under the influence of the internal conflict significant for the child of this age on the basis of the contradiction between two tendencies: "to be like everyone else" and "to stand out, that is to be different".

Unformed neuropsychological mechanisms, failure - academic and inability to solve life problems due to frequent misunderstandings with the environment due to negativism, maximalism, conflict, aggressiveness and impulsiveness and mental imbalance, characteristic of adolescence somatic complaints, self-harm and even unplanned in advance and instant self-death.

Neuropsychological symptom complex depressive disorders and lack of psychological support in the families of depressed children negatively affect their personal development.

The works of foreign researchers are interesting for studying the question of personal development of teenagers with depressive states. Thus, Maren Aldinger, Malte Stopsack, Ines Ulrich, Katja Appel, Eva Reinelt, Sebastian Wolff, Hans Jörgen Grabe, Simone Lang & Sven Barnow (Aldinger, Stopsack, & Ulrich, 2014) considered the differences in depression, anxiety, various forms of neuroticism development from adolescent to young adult related to significant emotional experiences.Y. Huang and N. Zhao, (2020), Xin Shen, Shijiao Yan et al (2021) empirically confirmed that young adults are significantly more susceptible to experiencing depression during the COVID-19 outbreak in China than adults. Undoubtedly, this fact indicates excessive vulnerability and sensitivity to life-threatening events, the emotional significance of psychological traumas in the life of the vounger generation and neuropsychological insecurity against depression. Shiner (2019) notes the presence of neurotic emotional-personal characteristics and traits in adolescence that can be considered in the context of the problem of personality predisposition to depression.

Peculiarities of functioning of the nervous system (including the CNS) and its influence on behavior are as follows. During adolescence the nervous system develops intensively, under the control of which the process of puberty takes place. The hypothalamic-pituitary system, which controls the activity of all endocrine glands (thyroid, adrenal, and sex glands), plays the leading role. Increased activity of hypothalamus during puberty period influences the correlation of cortical and subcortical processes in brain structures. Changes in nervous system functioning (in particular, in interaction of the cortex and subcortical structures and increased activity of the latter) lead to heightened excitability, emotional lability, weakness of inhibitory processes, hyperactivity. Due to the weakening of the control functions of the anterior cortex, the entire system of arbitrary regulation of mental activity and behavior suffers. It also affects cognitive processes, first of all, perception and attention. Thus, younger teenagers experience complications in maintaining voluntary attention, differentiation of sensory and verbal stimuli. Thus, at the beginning of puberty, a high level of subcortical activity leads to negative shifts in the work of brain systems responsible for the realization of cognitive functions. Indicators of increased

subcortical influences and weakened cortical tone are sharp disturbances of autonomic functions, heart palpitations, vascular disorders, etc. At the end of puberty, subcortical influences weaken and mature relationships are restored (Tokareva, 2014).

Neurohumoral and physiological levels of regulation of mental activity are basic for formation of neuropsychological development of the adolescent. Disturbance of their regulation especially in work of hypothalamus and limbic system influences occurrence and development of depressive states. Neuropsychological features of regulation of mental activity are connected with work of the main blocks of the brain: 1) block of regulation of tone and activity; 2) block of regulation of sensory actions, receiving and processing information; 3) block of programming, regulation and control of psychological activity. Tone regulation consists in activating the large hemispheres, maintaining attention, modally nonspecific memory, and providing basal emotions of fear, satisfaction, and motor activity. The regulation of sensory activities comes down to obtaining, storing, and processing information. The primary fields perform primary processing of impulses coming from the sensory receptor, the secondary ones analyze information, and the tertiary ones are responsible for its synthesis. Regulation and control of the course of mental activity is carried out exclusively with the help of functions of the third block of the brain, concentrated in the associative (tertiary) areas, which implement a series of movements, including emotional and volitional (Luria, 1962). In depressive states, all three areas of the brain have dysfunction in its functioning, weakening neuropsychological mechanisms of emotional self-regulation, which leads to depressive neuropsychological development of the adolescent, which may be accompanied by neurotic states manifestations of psychopathies, and in critical cases - to cause psychopathological disorders.

Abigail Oliver, Victoria Pile, Deborah Elm, Jennifer Y. F. Lau (2019) investigated the cognitive neuropsychology of depression in adolescents. They found that maladaptive patterns of information processing and associated patterns of neural dysfunction characterized adolescent depression. Cognitive theories suggest that depression is influenced by thoughts, attitudes toward self, others and the world, and the way information is processed. The way information is processed can influence emotional reactions. Thus, biased processing of emotional material ("cognitive biases") and difficulty processing non-emotional information

("poor cognitive control") can support depression and increase the risk of developing symptoms in vulnerable individuals.

Suicidal behavior in adolescents is predominantly a problem of transitional psychiatry and the psychology of psychopathies and non-psychotic reactive states against a background of character accentuation. Jean M. Twenge, Thomas E. Joiner, Megan L. Roger (2017) argue for an increase in depression symptoms and suicide rates among adolescents in the United States after 2010 as adolescents spent more time on new media (including social media and electronic devices such as smartphones) and reported more mental health problems.

More suicides are among adolescents who have experienced a severe loss (death of parents); adolescents with addictions (alcohol, drugs, toxins), which leads to dizziness of consciousness, mental disturbance and dipressive state; physically challenged or with mental disorders adolescents. Usually, suicide is considered as a phenomenon of social and psychological maladaptation of the person in the conditions of microsocial conflicts. Depression precedes most suicides. Signs of depression: loss of interest or sense of satisfaction in situations that would normally evoke positive emotions;inability to react adequately to praise; feeling of bitter sadness, turning into crying; feeling of inferiority, uselessness, loss of self-respect; pessimistic attitude to the future, negative perception of the past; recurrent thoughts about death or suicide; decreased attention span or ability to think clearly; lethargy, chronic fatigue, slowed movements and speech; decreased efficiency or productivity in learning, work, and life; changes in habitual sleep patterns, insomnia, or increased sleepiness; changes in appetite followed by weight gain or loss (Khrystuk, 2014).

Connection of deviations in personal development with accentuations of character at puberty age: the unstable accentuation is characterized by suggestibility, the strengthened propensity to imitation; the hyperthymic accentuation is connected with excessively stormy energy; the hysteroid accentuation is characterized by a strong need to be in the center of others' attention (Lichko, 1983). According to neuropsychologists, the consolidation of the psychopathic character and the formation of stable accentuations is associated with a significant increase in subcortical activity, which enhances excitatory and weakens inhibitory processes in the brain.

Eva Henje Blom, Tiffany C. Ho, Colm G. Connolly, Kaja Z. LeWinn, Matthew D. Sacchet, Olga Timofiyeva, Helen Y. Weng, and Tony T. Yang (2016) examined the neuroscience aspects of adolescent depression,

focusing on the persistent threat and summarizing the contextual factors that influence brain development and the pathophysiology of depression. A growing body of research supports the hypothesis that the effects of stress at an early age and increased vulnerability to stress due to lack of social connections and psychological support have a devastating effect on the central nervous system as it develops. This adverse effect on nervous system development leads to an increased risk of adolescent depression, less opportunity for nervous system recovery, and more frequent recurrences over the course of life. Adolescent depression is characterized by an enhanced amygdala response to emotional stimuli, which may further interfere with frontolimbic development of cognitive control mechanisms and contribute to increased emotional and social reactivity in depressed adolescents. Minimizing the effects of stress in early life and reducing vulnerability to stress through improved social connections and support for adolescents can help improve regulation of limbic function and optimize central nervous system development. To minimize the damaging effects of media, technology, and cyberbullying on the developing brain, a multifaceted approach, including school programs, educational media campaigns, and parental involvement is suggested.

The emotional connotations of experiencing depression in adolescence are depression, pessimism, irritation, aggression, depression, loneliness, devaluing one's personality, dominance of negative emotions with hostility or sadness, boredom, fears of rejection, resentment and feelings of guilt and complexes. Such emotional attitudes toward oneself and other people integrate into a complex personal formation containing such properties and qualities of the teenager's personality as egocentrism, personal immaturity, irresponsibility with respect to training and household duties, low level of emotional-volitional qualities, lack of initiative, withdrawal, inadequate actions, indiscipline.

Emotional and motivational features of personal development in adolescence are: the emergence of a hierarchy of value orientations and motivational components as a personal new formation of this age; low motivation for learning, emotional unbalance, orientation on value orientations ambivalent to themselves, the culture of appearance or to communicate with peers; a sense of adulthood as a central self-affirmation; motivation for achievement in learning can lose importance or be relevant; a qualitatively new level of emotional and personal self-regulation or low - if prone to depression; the cult of money or the priority

of metarial values over spiritual values at a low level of personal and neuropsychological development simultaneously, increased tension of needs and acute reaction to frustration of needs, exaggerated demands for satisfaction of their needs by others with destruction of their personal boundaries in adolescents with low level of frustration tolerance. Many modern teenagers, unfortunately, have no desire to learn, no life goals and beliefs and no orientation toward personal self-development. At the same time, the tendency to manifest various addictions dominates.

The most essential consideration of theoretical and methodological and psychological bases of personal growth of teenagers in a perspective of humanistic and phenomenological strategies of the person-centered approach is the work of I.S. Bulakh (2004). The researcher created a holistic model of the process of personal growth during adolescence, objectified psychological means of the process of formation of the normative-value sphere of modern teenagers in the context of a phenomenological picture of the space of self-awareness - the genesis of moral self-consciousness of teenagers, introduced in psychological practice a system of personal psychological work with teenagers and tested a program of personalitycentered education in adolescence. No less valuable for the analytical and generalizing work in our scientific article were the works of N. I. Bihun (2007, 2011) about psychogenic depressive disorders in adolescents and features of the organization of psychological preventive and corrective measures to overcome depressive states by teenagers; N. M. Tokareva, A. V. Shamne, N. M. Makarenko (2014) regarding the main theoretical aspects of the study of the adolescent period of development; Dutkevych (2012) on the biological and social conditions of mental development of the adolescent personality; O. E. Lichko (1983) on psychopathies and accentuations, biological and psychological bases of the cause of behavioral disorders in adolescents; O. Luria (1962) on higher cortical functions and their disorders.

Adolescence is the first transitional period from childhood to adulthood. Qualitative changes occurring in the intellectual and emotional spheres of the personality (intensive, uneven development and growth of the body, personal new formations, etc.) give rise to a new level of self-awareness, needs for self-assertion, equal and trusting communication with peers and adults. Intense sexual development determines the emergence of sexual desire and related experiences and interests. All of this serves as the basis for designating the adolescent crisis, which passes through the following three phases: the negative (pre-critical) phase - the phase of

breaking of old views, stereotypes, structures; the apogee of the crisis (as a rule - it is 13 years old); the post-critical phase - the period of formation of new stereotypes and construction of new structures. There are two manifestations of the teenage crisis: the crisis of independence (symptoms: rebelliousness, obstinacy, negativism, capriciousness, devaluing adults, rejection of their demands, rebellion, jealousy, etc.); the crisis of dependence (symptoms: excessive obedience, regression to old interests, tastes and forms of behavior). Some manifestations of the teenage crisis include: negativism as a negative attitude to everything around (subjective experiences: depression, melancholy, etc.); intellectualization as a way of psychological defense, manifested in a deepening in philosophical issues (subjective experiences: anxiety, worry, etc.); ability to analyze others and oneself in combination with self-centeredness (subjective experiences: dissatisfaction with oneself and others); depression as a result of growing up (childhood is over, but not yet an adult) or as a consequence of life failures (lack of understanding by adults, limitation of potential opportunities, etc.); subjective experiences: desolation, indifference, suicide. Under unfavorable socio-psychological conditions there are difficulties in personal development, in particular, formation of character accentuation (Cherezova, 2016, pp. 44 - 45).

I. S. Bulakh (2004) along with typical characteristics (egocentrism, ambivalence of feelings, emancipation, etc.) of personal development of teenagers such regularities of their growth as: global interest to the self, personal reflection, realization of the world of new own emotions and feelings, personal self-regulation, ambivalent attitude to the own Ego, comprehension of moral qualities and their self-assessment, realization of personal motives of acts are revealed. It is stated that in the period of adulthood there is an extraordinary expansion of the conditions of existence of the personality both in the social space and in the personal - in terms of expanding the range of spiritual tests of the self. The specified specific properties as self-valuable semantic formations are the values of a modern teenager. They restructure forms of his consciousness (thinking, volition, experience) and self-consciousness (self-knowledge, self-assessment attitude, self-regulation), thus giving the latter the dominant status among dimensions of personal growth. Self-consciousness acts as a central structural component of personal growth during adolescence. This psychological formation is characterized by the child's generalized ideas about his or her personality through comprehension of his or her own thoughts, feelings, properties and behavior as a whole. The teenager's personal growth is a

process of self-awareness and appreciation of his or her own self, which actualizes new levels of self-discovery of moral qualities and moral feelings and raises the personality to a meaningful experience of his or her own actions as free and responsible deeds.

Personal development during adolescence is appropriate to consider with the neuropsychological, since this period is one of the most stressful for the child. The inordinate qualitative and quantitative changes in physical growth for her psyche are also a stressful phenomenon for the body and mental activity as a whole at the hormonal, psychophysiological and psychological levels. It is known that in a situation of chronic stress the parasympathetic nervous system is activated, the reactions to stress can be associated with the release of such hormones: growth, sexual, insulin. Parasympathetic reactions are very closely connected with depressive states. The hormonal situation in the body, in particular serotonin, positively influences the behavior of the teenager, his academic performance, mood, and healthy sleep. In general, mood changes, heightened emotionality, high anxiety and emotional instability are connected with the activity of hormonal processes. Lack of serotonin in combination with emotional disorders and the most neuropsychologically stressed adolescent crisis create a condition under the influence of the psychological factor (teenage psychological traumas in the family and at school) for the formation of a character with accentuations of the asthenic, hypothemic, hysteroid type, which experts often assume. Psychopathic features with accentuations can serve as one of the personal preconditions for the occurrence of depressive states in teenagers. The propensity of adolescents to reactive depression with sensitivity (withdrawal, various fears, vulnerable reaction to psychological traumas, a feeling of hopelessness and intolerance) and labile (mood changes, fears of rejection and loss of an important person) accentuations of character is also well known in clinical psychology.

The chronological limits of adolescence are from 11-12 to 14-15 years. The main factor in the development of a teenager's personality is the growth of his or her social activity. There is a "growth spurt" in physical development, and the size and weight of the child's internal organs approach those of an adult. There is an improvement in the neurons of the cerebral cortex, and associative connections between different parts of the brain are enriched. Inhibitory processes intensify. The second signaling system develops intensively. The development of the child's nervous system leads to an increase in the child's mental activity, an increase in his ability to regulate

his behavior. At the same time, the central nervous system of teenagers is in a state of profound change, and therefore is not distinguished by endurance. Внаслідок цього підлітки підвищено збудливі, їхня поведінка нестійка, імпульсивна, дії часто нестримні, безконтрольні, підвищено реактивні. Changes in self-consciousness constitute the basic new formation in the psyche of the teenager who begins to realize himself or herself as a member of society and a participant of interpersonal relations. The leading activity in which the central new formation of the teenager's personality is formed is intimate-personal communication. The leading function of self-awareness of the adolescent is socially-regulatory; the aspiration to overcome one's shortcomings, in connection with which self-education arises, is peculiar to the adolescent (Dutkevych, 2012, pp. 370 - 376).

Studies of adolescent depression are predominantly conducted within the framework of medical-psychiatric and psychotherapeutic approaches. Underdevelopment of the problem in the field of psychological science and practice causes incomplete consideration of the specifics of teenage depression, including the importance in their genesis of such fundamental psychological conditions as the dominance of personal development in the structure of teenage development, the crisis of personal development of the individual in adolescence; personal symptomatology is not used enough in the detection of depressive disorders; limited arsenal of special programs and methods to help depressed teenagers psychologists of institutions of higher education (Bihun, 2011).

Ioana Straub, Rebecca Brown, Kathrin Malejko, Bonenberger, Georg Grön, Paul L. Plener, and Birgit Abler (2019) in a study of adolescent depression and young adults revealed some neurobiological mechanisms of depression. It has been found that during adolescence there is a significant physiological reorganization of gray and white matter of the brain. Differences in gray matter volume during adolescence may reflect different maturation processes. Gray matter volume in the frontal and parietal cortex peaks around age 10 to 12, and in the temporal cortex around age 16, with girls observed earlier than boys. The older the participants, the lower their global gray matter volumes, especially in the paracingulate and prefrontal cortex. However, it remains unclear whether stunted cortical development predisposes a person to depression, or whether depression delays the trajectories of brain maturation. Most depressed juveniles report that a stressful life preceded or provoked their first depressive episode.

Gemma Lewis, Martha Neary, Ela Polek, Eirini Flouri, Glyn Lewis (2017) assessed the relationship between parenting and adolescent depression. The incidence of depression increases markedly around age 13, and nearly three-quarters of adults report that their mental health problems began during adolescence. Maternal depression is a possible risk factor for adolescent depression. Parental depression negatively affects children's mental health and family relationships. Andrew S. London (2021) also investigated the impact of family stress on children's mental health. For example, adolescents who have siblings and are currently serving in the military are at risk for developing psychogenic depression and mental and behavioral health problems.

N. S. Kosa (2010) identified the main determinants of depression in adolescence, which can be combined into the following blocks: selfregulation; psychophysical state; personal dispositions; self-concept; adaptive potential. Depressive adolescents are characterized by explicit, critical and characterized moderate levels. Depressed teenagers are underdeveloped self-regulation system; mediocre functional state; low level of personality differential; imbalance in the emotional-volitional sphere; low adaptive potential; low levels of self-esteem, auto-sympathy, expectations of positive attitude toward others, self-confidence, self-acceptance prevail in the structure of self-attitude. As the level of depression increases, these manifestations intensify. Depressiveness manifests itself to a different degree in girls and guys, which can be explained by the peculiarities of gender roles, stereotypes, automatic stereotypes and social attitudes that teenagers try to conform to, as well as being reinforced by parental expectations. Thus, girls' suppression of emotions and feelings, as well as social forbidding of their manifestation, contributes to the occurrence of frustration, which can lead to depression.

During the pubertal period there is an intensive change of the body on the biophysical level, on the psychological level - the formation of female and male identity, which diversifies the final stage of personal development of the adolescent. The personal and neuropsychological symptomatology of modern adolescents described in the article is far incomplete, but sufficiently reveals the neuropsychological and personal features of adolescent ontogenesis.

Psychoprophylactic and psychocorrective measures for depressive disorders in adolescents

Depression precedes suicide and often accompanies it. We believe that effective prevention of suicide is neuropsychological correction of mental states in adolescents and introduction of a socio-psychological program on their personal development, as well as timely recognition in them of symptoms of depression and psychotherapeutic intervention.

psychoprophylactic Implementation of and corrective work with teenagers with depressive disorders requires appropriate training of practical psychologists, rehabilitation therapists, social pedagogues working in educational and rehabilitation institutions. It includes a number of aspects: formation of knowledge about the nature of childhood and adolescent depression, its causes, clinical manifestations and features of the course; mastering methods of diagnosing depressive disorders in children and adolescents; familiarization with the basic principles of prevention and overcoming depression in students; mastering the necessary psychological correction methods and techniques of overcoming depressive disorders; formation of knowledge about the features of developing psychological preventive and psychocorrectional programs; acquaintance with the basic requirements for psychoprophylaxis and psychocorrection of depressive states in schoolchildren; development of skills to analyze the effectiveness of psychoprophylactic, psychodevelopmental, and psychocorrective measuresPersonal development of adolescents by means of psychocorrective, psycho-developmental and psychoprophylactic programs allows to actualize psychological conditions for overcoming depressive disorders, as: development of personal competence of teenagers; creation of conditions for self-knowledge of teenagers and formation of aspiration to be himself; formation of high indicators of personal value of the attitude of self-control; development of ability to adequate self-expression and self-actualization; development of self-government skills; formation of positive personal thinking; development of personal self-protection and self-healing skills (Bihun, 2011).

The main determinants of overcoming depression in adolescence are: resources of adaptive potential (neuro-psychological stability, adequate self-esteem of the person, a sense of social support, features of building contact with others, positive experience of social communication, orientation on the existing standards and behavior in the society); personal

characteristics (tolerance to frustration, self-confidence, nonconformism, adequate self-esteem, inner emancipation); positive or adequate self-concept at all levels (global; differentiated by self-esteem, self-sympathy, self-interest and expectations of positive attitude to themselves; readiness for specific actions regarding their "Ego", in particular, self-esteem, self-acceptance, self-confidence or confidence in the ability and reality of effective realization of the goals of life; self-esteem, auto-sympathy, expectation of positive attitude from others, i.e. positive social support); optimal levels of personal semantic differential (adequacy and objectivity) and psychophysiological state, as well as developed and productive mechanisms and processes of personal self-regulation, in particular, independence or autonomy of activity organization and modeling of life goals, situations, work systems and their possible modification if necessary (Kosa, 2010).

The analysis of individual images of depression allows to reveal the reasons, mechanisms of development and features of a course of depressive disorder. The associative image of depression, being rooted in consciousness of the teenager, forms an imaginary individual depressive environment. The teenager feels its presence in and outside of his or her own Ego as part of his or her external living environment. The longer the associative image of depression is held in the teenager's consciousness, the more it passes from the imaginary plane to the sensual plane: imaginary depressive images start to be accompanied by unpleasant physical sensations (pressure, pain, tension, numbness, difficulty of breathing, etc.). The detailed analysis and work with individual images of depression of teenagers considerably enriches the arsenal of therapeutic methods and techniques. They allow the psychologist to penetrate into the depressive space of the young person, in the world of her feelings and experiences, and consequently to trace features of development of her world outlook, self-perception and allow to develop such correctional therapeutic programs which would correspond to the individual psychological features as much as possible (Bihun, 2007).

We have developed a program to develop emotional self-regulation in adolescents with depressive disorders and neuropsychocorrection of their depressive states, containing the following basic blocks: formation of the ability to understand one's own and others' emotions and the ability to manage them; neuropsychological work with the body (corporal and relaxation exercises) to release "trapped" emotions on a bodily level; psychological analysis of teenagers' personal problems related to low self-esteem, internal conflicts, propensity for negativism, self-harm and suicidal

behavior; psychological training in the development of the emotional-volitional sphere of the child.

Favorable psychological conditions, taking into account the characteristics of children of adolescence, defined: - involvement of communication as a leading activity in adolescence, taking into account the focus on social interaction, the content of moral norms, attitudes and personal attitudes of adolescents; aspirations of adolescents to adulthood and setting tasks that require an adult approach to the problem; use the tendency to positive self-affirmation in the formation of volitional qualities of personality, which are major factors in self-actualization and selfdevelopment; resistance to emotional orientation and positive worldview as emotional qualities of personality; resistance against persistence and purposefulness as constructive willpower properties of the personality; involving the ability to visualize and affirmation as factors in the development of positive thinking; using the emotional type of response of students; using business games and behavioral techniques as priority methods of work for them. Methods of work: psychorellaxation (autogenic, techniques, visualization muscle techniques), desensitization, business games, behavioral techniques, rational therapy, formation of a life scenario, modeling of life situations, psycho- and symboldrama, vicarious training, art therapy exercises, Gestalt therapy (Honcharuk, 2020, pp. 203-204). Such methods of work are certainly preventive and necessary, since adolescence is marked by emotional vulnerability, emotional-volitional regulation of activity has little dynamics, the function of self-control suffers, which adversely affects the development of the teenager's personality.

Depressive neuropsychological and personality development of adolescents with hysterical traits is accompanied by the following features: heightened excitability, psycho-vegetative reactions, erasure of personal boundaries, first of all parents by manipulative blackmail, demonstrative behavior, aggressiveness and contentment. Such personal characteristics in situations of psychological traumas form a propensity to depression and suicidal behavior.

For its prevention, we offer a program of expanding the teenager's inner resources through staged work: diagnosis of the type of accentuations and propensity for depression and suicidal actions; psychological analysis of constructive and rigid forms of psychological defense in stressful situations using methods of cognitive-behavioral psychotherapy and neurolinguistic

programming; learning to see positive aspects in any negative phenomenon with the methods of positive psychotherapy; discussion of coping strategies in relation to the subjective complexity of the psychotraumatic situation; activation of psychological conditions for the development of stress resistance in adolescent clients, taking into account their neuropsychological and personal characteristics; crisis psychotherapy with work on changing crisis coping and reducing the risk of suicidal tendencies; implementation of an individual approach in working out strategies for the long-term development of the teenager's personality and elimination of his or her shortcomings; to neuropsychological correction of crisis conditions with mandatory use of breathing, corporal and relaxation exercises; psychological training to develop reflection, personal self-regulation, autonomy, self-acceptance, empathy and tolerance toward others; and organization of art-therapy and creative activity groups for teenagers.

Timely diagnosis of the propensity for depression, analysis of the child's emotional states and thoughts by a psychologist, and taking appropriate measures can save his life and preserve his mental health, since the initial form of depression is common in bipolar disorder. Depressive disorders and suicidal behavior in an adolescent often require medication and long-term psychotherapy, primarily family therapy.

Conclusion

In the social neuropsychological and personality development approach, adolescence is favorable for depression at the emotional, cognitive, motivational, and behavioral levels. The mismatch between the expectations of the adolescent's needs and his neuropsychological resource, the instability of his self-esteem, the depressive nature of the adolescent crisis provoke the development of his personality with deviations, high levels of neuropsychological tension, feelings of loneliness and frustration, which can lead to suicidal behavior. A high level of depression is characteristic of adolescents with a hostile attitude to the environment, diffuse personal boundaries, self-loathing, difficulties in understanding their own and others' emotions, cognitive difficulties in objective assessment of reality, which is often associated with neuropsychological problems (dysfunctions) and psychopaths with character accentuations.

Depressive disorders most often appear at the pubertal stage of a child's neuropsychological and personal development - from age 12 to 15. The neuropsychological trigger mechanism for their occurrence is inhibitory

processes in the cerebral cortex and hormonal "explosions" in the body and a psychological factor - psychological traumas, discrepancy between a teenager's sense of adulthood and social requirements and real actions, lack of psychological support in the family, insufficient personal resources in coping with stresses. Emotional support of the depressed teenager stabilizes his or her self-esteem, promotes motivation to personal development, and raises the feeling of own importance and self-esteem. Depressive states can also be characteristic of adolescents with favorable personal development as at this age, children acquire a new status - independent of the family and school as adults.

References

- Aldinger, M., Stopsack, M., Ulrich, I., Appel, K., Reinelt, E., Wolff, S., Grabe, H. J., Lang, S., & Barnow, S. (2014). Neuroticism developmental courses implications for depression, anxiety and everyday emotional experience; a prospective study from adolescence to young adulthood. *BMC Psychiatry*, 14, Article number: 210. https://doi.org/10.1186/s12888-014-0210-2
- Apostu, I. (2016). The two dimensions of infidelity. *Postmodern Openings*, 7(2), 167-178. http://dx.doi.org/10.18662/po/2016.0702.11
- Berbets, T., Berbets, V., Babii, I., Chyrva, O., Malykhin, A., Sushentseva, L., Medynskii, S., Riaboshapka, O., Matviichuk, T., Solovyov, V., Maksymchuk, I., & Maksymchuk, B. (2021). Developing Independent Creativity in Pupils: Neuroscientific Discourse and Ukraine's Experience. BRAIN. Broad Research in Artificial Intelligence and Neuroscience, 12(4), 314-328. https://doi.org/10.18662/brain/12.4/252
- Bihun, N. I. (2007). Sub"yektyvni obrazy depresiyi u pidlitkiv yak predmet psykholohichnoyi refleksiyi [Subjective images of depression in teenagers as a subject of psychological reflection] N. I. Behun. *Psychology and society, 3*, 108-114. http://dspace.wunu.edu.ua/bitstream/316497/30233/1/Бігун.pdf
- Bihun, N. I. (2011). Osoblyvosti orhanizatsiyi psykholohichnykh zakhodiv z profilaktyky ta podolannya depresyvnykh rozladiv u pidlitkiv [Features of the organization of psychological measures for the prevention and overcoming of depressive disorders in adolesents]. *Problemy suchasnoyi psykholohiyi* [Problems of modern psychology], 11. http://lu-journal.com.ua
- Blom, E.H., Ho, T.C., Connolly, C. G., LeWinn, K.Z., Sacchet, M. D., Tymofiyeva, O., Weng, H. Y., & Yang, T. T. (2016). The neuroscience and context of adolescent depression. *Acta Paediatr.*, 105(4), 358–365. https://doi.org/10.1111%2Fapa.13299

- Bulakh, I. S. (2004). Psykholohichni osnovy osobystisnoho zrostannya pidlitka [Psychological bases of personal growth of the adolescent]: *Doctor of Psychology degree abstract:* 19.00.00 pedagogical and age psychology. Kiev. http://enpuir.npu.edu.ua
- Cherezova, I.A. (2016). Psykholohiya zhyttyevykh kryz osobystosti [Psychology of personality life crises]. Berdyansk, Berdyansk State Pedagogical University. http://bdpu.org:8080/bitstream/123456789/267/1/Cherezova%20I.O.%20Psykholohiya%20zhyttyevykh%20kryz%20osobystosti.PDF
- Demchenko, I., Maksymchuk, B., Bilan, V., Maksymchuk, I., & Kalynovska, I. (2021). Training Future Physical Education Teachers for Professional Activities under the Conditions of Inclusive Education. *BRAIN. Broad Research in Artificial Intelligence and Neuroscience*, 12(3), 191-213. https://doi.org/10.18662/brain/12.3/227
- Dutkevych, T. V. (2012). Dytyacha psykholohiya [Child Psychology]: Center for Educational Literature.

 https://shron1.chtyvo.org.ua/Dutkevych_Tetiana/Dytiacha_psykholohiia.pdf?
- Honcharuk, N. (2020). Psykholohichni osoblyvosti emotsiyno-vol'ovoho rehulyuvannya osobystosti pidlitkiv u sytuatsiyakh komunikatsiyi [Psychological features of the emotional-volitional regulation of the personality of adolescents in situations of communication]. In N. Mikhalchuk, L. Onufrieva (eds.), *Aktual'ni problemy psykholohiyi rozvytku i samostverdzhennya osobystosti u navchal'nomu seredovyshchi* [Actual problems of psychology of development and self-affirmation of the person in the educational environment] (pp. 175 205). Kamyanets-Podilskyi: LTD "Typographia "Ruta".

 http://elar.khnu.km.ua/jspui/bitstream/123456789/8647/1/№2%20Мон огр 21.12.19 Актуальні%20проблеми%20психології%20розвитку.pdf
- Huang, Y., & Zhao, N. (2020). Generalized anxiety disorder, depressive symptoms and sleep quality during COVID-19 epidemic in China: a web-based cross-sectional survey. *Psychiatry Res, 288*, 112954. https://doi.org/10.1016%2Fj.psychres.2020.112954
- Khrystuk, O. L. (2014). *Psykholohiya deviantnoyi povedinky* [Psychology of deviant behavior]: teaching aid. Lviv: Lviv State University of Internal Affairs of Ukraine.

 http://dspace.lvduvs.edu.ua/bitstream/1234567890/380/1/Xpucryk%20
 <a href="mailto:rcivata-alian:rciva
- Kosa, N. S. (2010). Psykholohichni determinanty podolannya depresyvnosti u pidlitkovomu vitsi [Psychological determinants of overcoming depression in adolescence]: abstract of the dissertation for the degree of Candidate of Psychological Sciences: 19.00.07 pedagogical and age psychology. Kyiv.

- Lewis, G., Neary, M., Polek, E., Flouri, E., & Lewis, G. (2017). The association between paternal and adolescent depressive symptoms: evidence from two population-based cohorts. *Lancet Psychiatry*, *4*, 920–26. https://doi.org/10.1016/S2215-0366(17)30408-X
- Lichko, A. E. (1983). *Psikhopotiya i aktsentuatsiya kharaktera u podrostkov*[Psychopotence and Character Accentuation in Adolescents], 2nd edition. Medicine. https://www.klex.ru/hk
- London, A. S. (2021). Depression and mental health service use among 12–17 year old U.S. adolescents: Associations with current parental and sibling military service. *SSM Population Health*, *16*, 100920. https://doi.org/10.1016/j.ssmph.2021.100920
- Luria, A. R. (1962). Vysshiye korkovyye funktsii i ikh narusheniye pri lokal'nikh porazheniyakh mozga [Higher cortical functions and their impairment in local brain lesions]. Moscow.

 https://mir.ismu.baikal.ru/src/downloads/952d095b 7aab7a24 luriya a.r.
 , vysshie korkovye funktsii cheloveka.pdf
- Oliver, A., Pile, V., Elm, D., & Lau, J. Y. F. (2019). The Cognitive Neuropsychology of Depression in Adolescents. *Current Behavioral Neuroscience Reports, 6*, 227–235. https://doi.org/10.1007/s40473-019-00187-0
- Sarancha, I., Maksymchuk, B., Gordiichuk, G., Berbets, T., Berbets, V., Chepurna, L., Golub, V., Chernichenko, L., Behas, L., Roienko, S., Bezliudna, N., Rassskazova, O., & Maksymchuk, I. (2021). Neuroscientific Principles in Labour Adaptation of People with Musculoskeletal Disorders. *BRAIN*. *Broad Research in Artificial Intelligence and Neuroscience*, 12(4), 206-223. https://doi.org/10.18662/brain/12.4/245
- Shen, X., Yan, S., Cao, H., Feng, J., Lei, Z., Zhang, W., Lv, C., & Gan, Y. (2021). Current Status and Associated Factors of Depression and Anxiety Among the Chinese Residents During the Period of Low Transmission of COVID-19. *Health Psychology*, 12, 700376. https://doi.org/10.3389/fpsyg.2021.700376
- Shiner, R. L. (2019). Negative emotionality and neuroticism from childhood through adulthood: A lifespan perspective. In D. McAdams, R. L. Shiner, & J. L. Tackett (Eds.), *Handbook of personality development* (pp. 137-152). New York: Guilford Press.
- Straub, J., Brown, R., Malejko, K., Bonenberger, M., Grön, G., Plener, P. L., & Abler, B. (2019). Adolescent depression and brain development: evidence from voxel-based morphometry. *J Psychiatry Neurosci.*, 44(4), 237–245. https://doi.org/10.1503%2Fjpn.170233
- Tokareva, N. M., Shamne, A. V., & Makarenko, N. M. (2014). Suchasnyy pidlitok u systemi psykholoho-pedahohichnoho suprovodu [The Modern Adolescent in the

System of Psychological and Pedagogical Support]. Kryvyi Rih. http://elibrary.kdpu.edu.ua/bitstream/0564/1760/1/підліток.pdf

Twenge, J.M., Joiner, T. E., & Roger, M. L. (2017). Increases in Depressive Symptoms, Suicide-Related Outcomes, and Suicide Rates Among U.S. Adolescents After 2010 and Links to Increased New Media Screen Time. *Clinical Psychological Science*, *6*(1), 3-17. https://doi.org/10.1177%2F2167702617723376