

# **ZNANSTVENI TEMELJI NOVIJIH POGLEDA NA PSIHOSOMATSKE POREMEĆAJE I ALEKSITIMIJU. TERAPIJSKI PRISTUPI PSIHOSOMATSKIM POREMEĆAJIMA**

## ***/ THE SCIENTIFIC BASES FOR MORE RECENT VIEWS ON PSYCHOSOMATIC DISORDERS AND ALEXITHYMIA. THERAPEUTIC APPROACHES TO PSYCHOSOMATIC DISORDERS***

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### **SAŽETAK/ABSTRACT**

Um i tijelo su nerazdvojni. Tjelesno utječe na emocionalno (i sve ostale aspekte osobnosti) i emocionalno utječe na tjelesno. U normalnom, kao i patološkom funkcioniranju organizma čini se kao da postoji stalna dvosmjerna interakcija između makrosvijeta (objektni odnosi) i mikrosvijeta (biokemija i epigenetika). Između tih krajnosti nalaze se strukture koje jednu formu signala (informacije) pretvaraju u drugu. Smatra se da se u podlozi psihosomatskih bolesti, uz genetsku sklonost, nalaze neadekvatni rani odnosi s njegovateljem. Takvi odnosi stvaraju pojačanu osjetljivost na stresne situacije u životu, onemogućuju razvoj unutarnje umirujuće strukture i blokiraju razvoj „emocionalnog selfa“. Zbog toga se pod stresom emocije doživljavaju kao primitivne senzomotorne nediferencirane tjelesne senzacije umjesto kompleksnih osjećaja koji imaju signalnu funkciju.

U terapijskome smislu ovdje stavljamo naglasak na psihoanalizu (psihoanalitičku psihoterapiju) i grupnu analizu. U individualnom se pristupu bavimo povezivanjem emocija s tjelesnim reakcijama, analizom transfera i kontratransfera, separacijom i individuacijom. U grupnoj analizi grupne emocionalne interakcije mogu biti vrlo intenzivne, što pokatkad može pobuditi rudimentarna osjećajna stanja psihosomatskog pacijenta koji često pati i od aleksitimije. Pri tome je važna uloga terapeuta koji mora održavati ravnotežu između progrupnih i antigrupnih zbivanja (koja mogu dovesti do pacijentova prekida terapije).

*/ The mind and the body are inseparable. The physical affects the emotional (and all other aspects of personality), and the emotional affects the physical. In normal, as well as pathological functioning of the body, there seems to be a constant two-way interaction between the macro world (object relations) and the micro world (biochemistry and epigenetics). Between these extremes lie the structures that transform one signal form (information) into another. It is believed that the basis of psychosomatic diseases, in addition to genetic predisposition, are inadequate early relationships with the caregiver. Such relationships create increased*



*sensitivity to stressful situations in life, prevent the development of an inner calming structure, and block the development of the "emotional self". For this reason, in a state of stress the emotions are perceived as primitive undifferentiated sensorimotor physical sensations, instead of complex emotions with a signal function.*

*In a therapeutic sense, we emphasize psychoanalysis (psychoanalytic psychotherapy) and group analysis in this aspect. In the individual approach, we address the connection between emotions and physical reactions, transference and countertransference analysis, as well as separation and individuation. In group analysis, group emotional reactions can be very intense, which can sometimes evoke the rudimentary emotional states of a psychosomatic patient who often suffers from alexithymia as well. The role of the therapist is thereby important in order to maintain the balance between pro-group and anti-group occurrences (which may lead a patient to discontinue therapy).*

#### KLJUČNE RIJEČI / KEY WORDS

objektni odnosi / *object relations*, psihosomatski poremećaj / *psychosomatic disorder*, aleksitimija / *alexithymia*, psihoanaliza / *psychoanalysis*, grupna analiza / *group analysis*, antigrupa / *anti-group*

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## UVOD

Psihosomatske poremećaje doživljavamo kao vrlo kompleksno područje. Lakše je istraživati ili liječiti samo tijelo ili samo psihu, iako su i oni sami po sebi vrlo složeni. Njihovo pak prožimanje komplicira pristup.

Na početku dajemo skicu znanstvenih temelja novijih pogleda na psihoso-

## INTRODUCTION

Psychosomatic disorders are perceived as a very complex area. It is easier to research or treat only the body or only the psyche, although they alone are very complex as well. Their interconnection complicates the approach.

In the beginning, we will provide an overview of the scientific bases for more re-

matske poremećaje i aleksitimiju. U nastavku se bavimo terapijskim pristupom, pri čemu su nam važne teorija psihoanalize (kroz prizmu kontratransfera) i teorija grupne analize, primarno S. H. Foulkesa, ali i M. Nitzuna.

## ZNANSTVENI TEMELJI NOVIJIH POGLEDA NA PSIHOZOMATSKE POREMEĆAJE I ALEKSITIMIJU

Osnovne anatomske činjenice  
važne za razumijevanje  
psihosomatskih poremećaja

### *Nerazdvoživost uma i tijela*

Postoji čvrsta isprepletenost uma i tijela. Ima li anatomske osnova za takvu tvrdnju? Pessoa (Pessoa L 2008) smatra da se kognitivno-afektivno-tjelesni doživljaji temelje na dinamičnoj interakciji moždanih neuronskih mreža. Preklapaju se neuronski krugovi: tjelesno-afektivno, afektivno-kognitivno i kognitivno-tjelesno. Na djelu je mnogostruka umreženost pri kojoj je nemoguća podjela na isključivo tjelesno ili afektivno ili kognitivno. Osim te, funkcionalne povezanosti, postoji i strukturna povezanost. Ilustracija je toga da kortikalna područja koja sudjeluju u procesiranju afektivnih informacija, kao što su orbitofrontalni korteks (OFC) i anteriorni cingularni korteks (ACC), imaju „primitivniju” strukturu,

cent views on psychosomatic disorders and alexithymia. Later on, we will address the therapeutic approach, wherein we emphasize the value of psychoanalytic theory (from the perspective of countertransference) and group analysis theory, primarily by S.H. Foulkes, but also by M. Nitzun.

## THE SCIENTIFIC BASES FOR MORE RECENT VIEWS ON PSYCHOSOMATIC DISORDERS AND ALEXITHYMIA

The basic anatomical facts  
relevant to the understanding of  
psychosomatic disorders

### *The inseparability of mind and body*

The mind and the body are strongly intertwined. Are there anatomical bases for such claims? Pessoa (Pessoa L, 2008) believes that cognitive-affective-physical experiences are based on dynamic interactions of the brain neural networks. The neural circuits overlap: physical-affective, affective-cognitive and cognitive-physical. Multiple networking is at work here, wherein a division to exclusively physical or affective or cognitive is not possible. In addition to the functional connection, structural connection is also present. This is illustrated in the fact that the cortical regions active in the processing of affective information, such as the orbitofrontal cortex (OFC) and the



tj. umjesto 6 slojeva imaju 3 ili 4 sloja kao što je slučaj kod unutarnjeg prstena limbičnog režnja, tj. limbičnog polja. Slikovito, kao da je dio afektivne strukture, npr. kod OFC-a, zašao u područje kognitivne strukture (1).

### ***Anatomski temelji emocionalne kontrole***

Važno je reći, u smislu emocionalne kontrole, da postoje jake dvosmjerne veze amigdale (važne za procjenu stresa i strah) i prefrontalnog korteksa koji tonički inhibira amigdale. Mediobazalni telencefalon važan je za izražavanje emocija primjerenih situaciji. Desna je moždana kora više u vezi s obradom emocionalnih sadržaja nego moždana kora lijeve polutke. Istraživanjem se spoznalo da su u kontroli emocionalnih i visceralnih reakcija važne, počevši od korteksa, ove strukture: prednji dio inzule, prednji dio cingularne vijuge, vrh temporalnog režnja, orbitofrontalni korteks (OFC). Te strukture možemo svrstati pod paralimbičko polje (čija kora ima 5 – 6 slojeva), a to je vanjski prsten limbičnog režnja, a funkcija mu je da upravlja homeostazom u odnosu s vanjskom realnošću i sa trenutačno prevladavajućim duhovnim i motivacijskim stanjima, kao i da ima bitnu ulogu u višim oblicima emocionalnog ponašanja. Majmun kojemu su odstranjene amigdale i paralimbično polje

anterior cingulate cortex (ACC), involve a more "primitive" structure, i.e. rather than 6 differentiated layers, they have 3 or 4 layers, which is the case in the inner ring of the limbic lobe, i.e. the limbic area. Figuratively, as if part of the affective structure, e.g. in the case of the OFC, accessed the area of cognitive structure (1).

### ***The anatomical bases of emotional control***

It is important to mention that, in terms of emotional control, there are strong two-way connections between the amygdala (important for stress and fear assessment) and the prefrontal cortex which tonically inhibits the amygdalas. The mediobasal telencephalon is important for expressing emotions appropriate to the situation. The right cerebral cortex is associated with the processing of emotional content more than the left cerebral cortex. Studies have shown that, starting with the cortex, the following structures are important for the control of emotional and visceral reactions: the anterior insula, anterior cingulate, temporal lobe apex, orbitofrontal cortex (OFC). These structures can be classified as part of the paralimbic area (with a cortex comprising of 5-6 layers), which is the outer ring of the limbic lobe, and its function is to control the homeostasis in relation to the external reality and the currently prevailing spiritual and motivational conditions, but also has an important role for the higher forms of emotional behavior. A monkey whose amygdalas and the paralimbic area have been re-

ne može prepoznati značenje emocija drugih majmuna koje su izražene glasom, pokretima, stavom tijela, izrazom lica. Paralimbično polje nadzire hipotalamus, autonomni sustav, amigdale, parabrahijalno polje, dorzalnu jezgru n. vagusa, solitarnu jezgru, retikularnu susptanciju u meduli oblongati i pon-su. Paralimbična polja vjerojatno imaju važnu ulogu u patofiziologiji psihosomatskih bolesti. Paul Mc Leon je 1949. godine paralimbično polje nazvao „visceralnim mozgom”.

Na nižoj razini, sljedeći nadzorni centar jest unutarnji prsten limbičnog režnja, tj. limbično polje – čija je kora troslojna (prepiriformna i periamigdaloïdna areja i subukulum) i koje je važno za doživljavanje i izražavanje emocija. Na još nižoj razini, u mezencefalonu, PAG (periakveduktalna grizea, tj. siva tvar u mezencefalonu) važna je za glasovno izražavanje emocija (plakanje, krici, jauci, smijeh). To je područje jako povezano s hipotalamusom i važno je za doživljavanje i izražavanje emocija. U izvršnome smislu to je područje povezano s nucleus ambiguus (u produljenoj moždini) koji inervira mišiće ždrijela i glasiljki (2,3).

## Teorija stresa

Ovdje ćemo samo ovlaš spomenuti doprinose W. B. Cannona i H. Selyea. Cannon je (u 20-im godinama prošlo-

moved cannot recognize the meaning of the emotions expressed by other monkeys in their voices, movements, posture and facial expressions. The paralimbic area controls the hypothalamus, the autonomic system, the amygdalas, the parabrachial area, the dorsal nucleus of the vagus nerve, the solitary nucleus, the reticular substance of medulla oblongata and pons. The paralimbic areas probably play a significant role in the pathophysiology of psychosomatic diseases. Paul Mc Leon used the term “visceral brain” for the paralimbic area, in 1949.

At a lower level, the next supervisory center is the inner ring of the limbic lobe, i.e. the limbic area – which has a three-layer cortex (the prepyriform and periamygdaloïd area and subiculum), and which has an important role in the perception and expression of emotions. At an even lower level, in the mesencephalon, the PAG (periaqueductal gray, i.e. gray matter in the mesencephalon) is important for the vocal expression of emotions (crying, screaming, moaning, laughter). This area is strongly connected with the hypothalamus and is critical for the perception and expression of emotions. In executive terms, this area is connected with the nucleus ambiguus (in the medulla oblongata) which innervates the muscles of the pharynx and the vocal cords (2, 3).

## The stress theory

In this part, we will briefly mention the contributions of W.B. Cannon and H. Se-



ga stoljeća) u životinja uočio reakciju borba-bijeg pri suočavanju sa stresom. Selye je (30-ih godina prošloga stoljeća) otkrio da životinje na stres reagiraju hipertrofijom nadbubrežne žlijezde, atrofijom timusa i stvaranjem ulkusa na želudcu. Organizam, na stres reagira kroz faze alarma, otpora i iscrpljenja, što se naziva općim adaptacijskim odgovorom. Psihički stres utječe na nastanak psihičkih, ali i tjelesnih (psihosomatskih) poremećaja. Stresori koji se dogode rano u razvoju imaju veće i trajnije posljedice nego stresori u odrasloj dobi, a posljedice ovise o intenzitetu, trajanju i frekvenciji stresora. Kronični ekscesivni stres nosi velik rizik od teških posljedica. Blagi do umjereni stres može poticati emotivno i kognitivno učenje (4).

Važna moždana struktura povezana sa stresom i strahom jesu amigdaloide jezgre. Čini se da su one središnje emocionalno računalo mozga, što procjenjuje emocionalno značenje opaženih osjetilnih informacija i tomu dodaju motivacijsko značenje i utječu na svrhovito ponašanje. Naravno da sve to ne radi potpuno sama sitna jezgrića (centralna) u amigdali, već u suradnji s nizom drugih moždanih područja kao što su: primarna osjetna kora mozga, unimodalna (primarna) i polimodalna (sekundarna) asocijativska moždana kora. Zatim, amigdale (preko nucleus paraventricularis u

lye. In his study of animals (in the 1920s), Cannon observed their fight or flight response in situations of coping with stress. Selye discovered (in the 1930s) that animals react to stress with hypertrophy of the adrenal gland, atrophy of the thymus and the formation of stomach ulcers. The organism reacts to stress through the stages of alarm, resistance and exhaustion, which is referred to as the general adaptation response. Mental stress affects the onset of psychological, but also physical (psychosomatic) disorders. Stressors that occur early during development have bigger and more permanent consequences than the stressors in adulthood, and the consequences differ depending on their intensity, duration and frequency. Chronic excessive stress bears a high risk of severe consequences. Mild to moderate stress can encourage emotional and cognitive learning (4).

An important brain structure associated with stress and fear are the amygdaloid nuclei. It seems as though they are the central emotional computer of the brain, calculating the emotional meaning of the observed sensory information and adding emotional meaning to them, as well as affecting purposeful behavior. This is, of course, not done by a single minute nucleus (central) in the amygdala, but in cooperation with a series of other brain areas such as: the brain's primary sensory cortex, and the unimodal (primary) and polymodal (secondary) association cortex. Furthermore, the amygdalas (through the nucleus paraventricularis

hipotalamusu, a onda i preko hipofize) potiču sekreciju hormona stresa. Preko lateralnog hipotalamusa i ARSVL-a (area reticularis superficialis ventrolateralis u retikularnoj formaciji moždanog debla) aktivira se simpatikus. Preko medijalnog hipotalamusa, a zatim i areje parabrahijalis (u ponosu), kao i dorzalne jezgre n. vagusa i nucleusa ambiguusa (u produljenoj moždini) aktivira se parasimpatikus. Preko PAG-a amigdala utječe na emocionalno ponašanje. Preko n. reticularis pontis caudalis pojačavaju se refleksi (2,3).

Akutni je stres zapravo korisna reakcija koja u opasnoj situaciji priprema organizam na „borbu ili bijeg” i koja se, u prvom valu, preko simpatikusa, aktivira već nakon nekoliko sekundi. Drugi val nastaje nakon nekoliko minuta pojačanim izlučivanjem kortizola (preko osi hipotalamus – hipofiza – nadbubrežna žlijezda), a tek nakon nekoliko sati potiče se ekspresija gena. Kortizol mobilizira energiju (preko glikogenolize, lipolize, glukoneogeneze) i šteti energiju (inhibirajući dugoročan anabolizam u smislu procesa rasta) (3).

Problem je s kroničnim stresom jer kronično povišeni kortizol nakon 3 tjedna uzrokuje atrofiju dendrita piramidnih neurona i smanjuje broj GABA-ergičnih interneurona u hipo-

in the hypothalamus, and then through the pituitary gland) stimulate the secretion of the stress hormone. The sympathetic nervous system is activated through the lateral hypothalamus and the ARSVL (area reticularis superficialis ventrolateralis in the reticular formation of the brainstem). The parasympathetic nervous system is activated through the medial hypothalamus, then through the area parabrachialis (in pons) and through the dorsal nucleus of the vagus nerve and the nucleus ambiguus (in the medulla oblongata). The amygdala affects emotional behavior through the PAG. The reflexes are increased through the nucleus reticularis pontis caudalis (2, 3).

Acute stress is, in fact, a useful reaction which prepares the organism for “fight or flight” in a dangerous situation, and in the first wave, it is activated via the sympathetic nervous system already after several seconds. The second wave occurs after several minutes in the increased secretion of cortisol (through the hypothalamus-pituitary-adrenal axis), and it is only after several hours that gene expression is stimulated. Cortisol mobilizes energy (through glycogenolysis, lipolysis, gluconeogenesis) and saves energy (by inhibiting the long term anabolism in terms of the growth process) (3).

The problem with chronic stress lies in the fact that after three weeks chronically elevated cortisol causes atrophy of dendrites of pyramidal neurons and reduces the number of GABAergic interneurons in the hippocampus, while after



kampusu, a nakon nekoliko mjeseci počinje i smrt neurona, isto tako u hipokampusu (vjerojatno slabom regulacijom transporta iona Ca kroz neuronsku membranu, kao i inhibicijom lokalne iskorištenosti glukoze u hipokampusu zbog smanjenja broja transportera glukoze u membranama neurona) (3).

### *Stres u životnom ciklusu*

Prednatalni stres u ljudi: majčina depresija i anksioznost u 3. trimestru trudnoće povezana je s povećanom metilacijom (blokada) gena promotora za glukokortikoidni receptor u neonatalnim leukocitima, a posljedica je toga povećana razina kortizola u slini u odgovoru na stres u dobi od 3 mjeseca života (5).

Ako gledamo utjecaj stresa kroz cijeli životni ciklus, možemo reći sljedeće: u prednatalnom razdoblju stres najjače djeluje na hipokampus, frontalni korteks i amigdale, u djetinjstvu na hipokampus, a u adolescenciji stres najjače djeluje na korteks. U odrasloj dobi kronični stres uzrokuje atrofiju dendrita u hipokampalnim CA3 piramidalnim neuronima i smanjuje hipokampusni volumen. Isto se događa i u starosti uz slabije preživljavanje prefrontalnih kortikalnih neurona. U kroničnom se stresu povećava volumen amigdala jer se povećava količina dendrita (6).

several months it accelerates neuron death, also in the hippocampus (probably through weak regulation of the Ca ion transport through the neuronal membrane, as well as through the inhibition of the local glucose utilization in the hippocampus due to a decrease in the number of glucose transporters in the neuronal membranes). (3)

### *Stress in the life cycle*

Prenatal stress in humans: a mother's depression and anxiety in the 3rd trimester of pregnancy are associated with increased methylation (blockade) of the glucocorticoid receptor promoter gene in neonatal leukocytes, which results in increased levels of cortisol in the saliva in response to stress at the age of three months (5).

If we view the effects of stress throughout the entire life cycle, we can make the following observations: stress has the biggest effect on the hippocampus, the frontal cortex and the amygdalas in the prenatal period, it affects the hippocampus during childhood, while during adolescence it has the biggest effect on the cortex. In adulthood, chronic stress causes atrophy of dendrites in hippocampal CA3 pyramidal neurons and reduces the hippocampal volume. The same process also occurs in old age, with lower survival of prefrontal cortical neurons. The volume of amygdalas increases under chronic stress, caused by the increased amount of dendrites (6).



## *Objektivizacija stresa*

Može li se stres dojenčeta objektivno detektirati? Field je pratila, kod 32 dijade, dojenčetovo odvratanje pogleda (prema mnogim istraživačima, odvratanje pogleda služi smanjenju tenzije) i srčanu frekvenciju dojenčadi čije su majke u interakciji s njima imale umjerenu, malu („zamrznuto lice“) ili pojačanu (privlačenje pažnje) aktivnost. Primijećeno je da je dojenčad češće odvratala pogled i imala veću srčanu frekvenciju pri maloj ili pojačanoj majčinoj aktivnosti. Pojačana srčana frekvencija može se objasniti odgovorom simpatikusa na stres zbog premale ili prevelike stimulacije (7).

U istraživanju na životinjama vidjelo se da u sazrijevanju CNS-a veliku ulogu ima rana interakcija mladunčadi životinja i njihovih majki. Hofer primjećuje da rane interakcije roditelja i mladunčadi reguliraju fiziološke i bihevioralne osobine mladunčadi, ali i ponašanje roditelja (u ljudi, u smislu poticanja na samostalnost i sazrijevanje). Majčina odsutnost (u smislu nedostatka njezina mirisa, topline, taktilne i vestibularne stimulacije, učestalosti dojenja i količine mlijeka) ili majčina uznemirenost aktivira integrirani psihofiziološki odgovor mladunčadi životinja u obliku gubitka apetita i težine, želučanih erozija, promjene količine REM i non-REM spavanja, pojave hiperaktivnosti ili stereotipnog ljuljanja (8).

## *The objectification of stress*

Can stress be objectively detected in infants? In 32 dyads, Field monitored gaze aversion in infants (according to many researchers, gaze aversion serves to reduce tension) and the heart rate of infants whose mothers interacted with them with moderate, low (“still-face“) or increased (attracting attention) activity. It was observed that infants averted their gaze more often and had a higher heart rate when mothers displayed low or increased activity. Increased heart rate can be explained by the sympathetic nervous system response to stress due to too little or too much stimulation (7).

In studies conducted on animals, it was evident that early interaction between young animals and their mothers plays a significant role in the maturation of the central nervous system (CNS). Hofer noted that early interactions between parents and the young regulate the physiological and behavioral traits of the young, as well as the behavior of the parents (in humans, in the sense that they stimulate independence and maturation). A mother’s absence (in the sense of lack of her smell, warmth, tactile and vestibular stimulation, breastfeeding frequency and milk quantity) or mother’s anxiety - activate the integrated physiological response in young animals, which manifests itself in the loss of appetite and weight, gastric erosions, changes in the REM and non-REM sleep quantities, appearance of hyperactivity or stereotypical rocking (8).



Drugi autori navode hormonalne i neurotransmitske promjene u stresu: što je manja količina majčina lizanja i njege svojih okoćenih potomaka (u štakora), viša je razina ACTH-a i kortizola u reakciji na stres i u mladoj i u odrasloj dobi potomaka, veća je brojnost ACTH-RH receptora u locusu ceruleusu (važan za noradrenalin), smanjena je glukokortikoidna osjetljivost na *feed back*, smanjena je brojnost benzodiazepinskih receptora u jezgrama amigdala i locuca ceruleusa, smanjena je GABA (inhibitorni neurotransmiter) inhibicija emocija. Sve je ovo potvrđeno u mladunčadi rebus majmuna (koji su evolucijski mnogo bliži čovjeku od štakora) sa slabom majčinskom njegom (9). Dakle, u stresu se povećava količina ekscitacijskih i smanjuje se količina inhibicijskih, umirujućih tvari.

### ***Epigenetika: kratak osvrt na intracelularno djelovanje stresa***

Epigenetika je relativno novija znanstvena disciplina koja se brzo razvija. Za sada su poznati neki načini regulacije prepisivanja DNA: transkripcijski faktori koji prepoznaju specifičan slijed DNA baza, metilacija DNA (i proteini koji se vežu na metilirane baze), modifikacija histona (acetilacija, fosforilacija, metilacija, ubikvitilacija, sumoilacija, RNA ribozilacija), proteini s bromodomenom (koji prepoznaju promijenjene, npr. acetilirane histone), promjena kon-

Other authors mention hormonal and neurotransmitter changes during stress: the lower the amount of maternal licking and nursing of their brooded offspring (in rats), the higher are the levels of ACTH and cortisol in the stress response among both young and adult offspring, and higher are the numbers of ACTH-RH receptors in the locus ceruleus (important for noradrenaline), also, the glucocorticoid sensitivity to feedback reduces, the number of benzodiazepine receptors in the nuclei of the amygdalas and the locus ceruleus reduces, and the GABA (inhibitory neurotransmitter) for the inhibition of emotions reduces. All of the above was observed in the young of the rhesus monkeys (which are evolutionarily much closer to humans than rats) with poor maternal care (9). Therefore, stress increases the amount of excitatory, and reduces the amount of inhibitory, calming substances.

### ***Epigenetics: a brief overview of the intracellular effects of stress***

Epigenetics is a relatively new and rapidly developing scientific discipline. Some methods of regulating DNA transcription are currently known: transcription factors that recognize a specific sequence of DNA bases, DNA methylation (and proteins that bind to methylated bases), histone modification (acetylation, phosphorylation, methylation, ubiquitylation, sumoylation, RNA ribosylation), proteins with bromodomain (which recognize modified, e.g. acetylated histones),

zistencije kromatina (npr. preko HP-a, tj. heterokromatinskih proteina s tzv. kromodomenom), HMG proteini (vrlo mobilna grupa proteina), nekodirajuća RNA (npr. mikroRNA, tj. miRNA, koja privlači proteinske komplekse (RISC) i veže se na mRNA koju zatim kida ili samo blokira, ovisno o podudarnosti N-baza) (10). Još uvijek postoje dileme oko započinjanja procesa transkripcije i o ulozi evolucije u tome (11,12,13,14).

U stresu se iz nadbubrežnih žlijezda pojačano luči kortizol. Kortizol ulazi u citoplazmu i veže se na glukokortikoidni receptor (GR) (koji je spojen s proteinom šaperonom Hsp90 i koji je neaktivan do vezanja s kortizolom, koji, kad se veže za receptor, dovodi do razdvajanja receptora i šaperona, pri čemu se stvara receptorski dimer koji se veže na DNA i aktivira transkripciju gena) (14). Kortizol preko GR-a ima višestruka djelovanja: aktivira ili blokira transkripcijske faktore, utječe na metilaciju DNA molekule, utječe na aktivnost metiltransferaza, utječe na metilaciju i acetilaciju histona, regulira mikroRNA, potiče remodeliranje kromatina, što je važno za transkripciju (15).

Mnogi autori smatraju da vanjska okolina utječe na epigenetske promjene. U mladunaca životinja i čovjeka količina i kvaliteta majčine njege stvara neku vrstu epigenetskog sjećanja koje može imati dugotrajan karakter. Izuzetno je

change in chromatin consistency (via, e.g. the HP, i.e. heterochromatin proteins with the so-called chromodomain), HMG proteins (a very mobile group of proteins), non-coding RNA (e.g. micro, i.e. miRNA, which attracts protein complexes (RISC) and binds to the mRNA, which it then breaks or only blocks, depending on the N-bases matching) (10). Dilemmas still exist with regard to the start of the transcription process and the role of evolution in that regard (11, 12, 13, 14).

In a state of stress, the adrenal glands release more cortisol. Cortisol enters the cytoplasm and binds to the glucocorticoid receptor (GR) (which is coupled to the chaperone protein Hsp90 and which is inactive until it binds to cortisol, which, when bound to the receptor, leads to a separation of the receptor and the chaperone, creating a receptor dimer which binds to DNA and activates gene transcription) (14). Through the GR, cortisol has multiple effects: it activates or blocks transcription factors, affects the methylation of DNA molecules, affects the activity of methyltransferases, affects the methylation and acetylation of histones, regulates the microRNA, and promotes chromatin remodeling which is important for transcription (15).

Many authors believe that the external environment affects epigenetic changes. In the young of animals and in humans, the quantity and quality of maternal care creates a type of epigenetic memory which can have a long lasting character. The field of epigenetic research is



široko područje epigenetskih istraživanja pa ovdje donosimo samo dvije kratke ilustracije. Istraživani su mladunci štakora stari 6 dana koji su primali zadovoljavajuću majčinsku njegu. U njih je nađena povišena razina serotonina u hipokampusu. Detalji intracelularnih zbivanja mogu se naći u navedenoj referenci (16).

Što se tiče epigenetskih promjena u vezi s regulacijom emocija, uočeno je da je izlaganje mladunaca štakora svakodnevnoj deprivirajućoj njezi u prvome postnatalnom tjednu povezano s povećanom metilacijom dijela genske strukture i redukcijom mRNA koja kodira neurotrofni moždani faktor (Bdnf), važan za rast, u prefrontalnom korteksu, koji je pak važan za regulaciju emocija (5).

### Rani odnos dojenčeta i njegovatelja i unutarnje reprezentacije kao temelj samoregulacije

S elementarne anatomije, patofiziologije, biokemije i (epi)genetike prelazimo na rani odnos majke i dojenčeta. Istraživači *attachmenta* (J. Bowlby, M. Ainsworth, D. Stern, P. Fonagy i drugi) daju važne uvide u rane odnose majke i djeteta. Beebe B, studentica Sterna, navodi da je majčina senzitivnost (usklađenost) središnja postavka teorije *attachmenta*. Senzitivnost podrazumijeva: svjesnost dojenčevih signala, njihovu

extremely wide, therefore we will present only two short illustrations in this paper. Six-day old rat pups that received adequate maternal care were studied. Elevated serotonin levels were found in their hippocampus. Details on the intracellular events can be found in the stated reference (16).

As regards epigenetic changes related to emotion regulation, it was observed that exposure of rat pups to daily deprived care in the first postnatal week is associated with increased methylation of part of the gene structure and a reduction of the mRNA that encodes the neurotrophic brain factor (Bdnf), which is important for growth, in the prefrontal cortex which, in turn, is important for the regulation of emotions (5).

### Early infant-caregiver relationship and internal representations as the basis for self-regulation

From elementary anatomy, pathophysiology, biochemistry and (epi)genetics, we move on to the early relationship between a mother and infant. Attachment researchers (J. Bowlby, M. Ainsworth, D. Stern, P. Fonagy and others) provide significant insights into the early relationships between a mother and infant. Beebe B, Stern's student, observed that maternal sensitivity (coordination) is a central construct of attachment theory. Sensitivity implies the following: awareness of the infant's signals, their accurate

točnu interpretaciju i adekvatnu i brzu reakciju. Adekvatan je odnos srednje intenzivan (ni prejak ni preslab). Majke sigurne djece pokazuju umjerenu usklađenost. Pretjerana je usklađenost nađena u izbjegavajuće i preokupirane djece. Majke dezorganizirane djece pokazivale su znatnu neusklađenost u smislu: negledanja dojenčadi ili pretjeranog unošenja u lice, neusklađenosti emocija i mimike s dojenčevim, emocionalnog nesudjelovanja („zamrznuto lice“) i u smislu neusklađenosti dodira s dojenčevim potrebama. Pretpostavlja se da majke dezorganizirane djece ne mogu podnijeti djetetov stres jer on u njima izaziva vlastiti stres od kojeg se brane poricanjem djetetova stresa. U drugoj polovini prve godine života nastaju tzv. unutarnji radni modeli (URM) sa značajnim njegovateljem. Djeca su motivirana da percipiraju usklađenost, stupanj usklađenosti, da anticipiraju događaj i da djeluju po svojim očekivanjima. Ta proceduralna očekivanja temeljni su građevni blokovi URM-a i ona u sebe uključuju stupanj usklađenosti. Posljedica je neusklađenosti da su URM-i konfuzni i inkoherentni, a to znači da s takvim modelima postoje: 1. očekivanje stresa i nemogućnosti umirivanja jer bliska osoba ne može prepoznati djetetovo stanje stresa. Time se remeti djetetov jezgrovni osjećaj sigurnosti. 2. teškoća u predviđanju što će se dogoditi u sebi i u partneru, 3. teškoća u prepoznavanju vlastitih osje-

interpretation, appropriate response and prompt response. An adequate relationship is of a moderate level (not too strong or too weak). Mothers of secure infants show moderate coordination. Excessive coordination was observed in avoidant and preoccupied infants. Mothers of disorganized infants displayed a significant lack of coordination in the following sense: gazing away from the infant or excessive gazing at the infants' face, emotions and expressions uncoordinated with the infant's, emotional lack of involvement ("still-face"), as well as in the sense of lower touch coordination with the infant's needs. It is presumed that the mothers of disorganized infants cannot handle the infant's stress because it causes them to stress as well, and they defend themselves from it by denying the infant's stress. The so-called internal working models (IWM) with the significant caregiver arise in the second half of the first year of life. Infants are motivated to perceive coordination, the degree of coordination, to anticipate events and to act per their expectancies. These procedural expectancies are the basic building blocks of IWMs and they also incorporate the degree of coordination. As a consequence of a lack of coordination, the IWMs become confusing and incoherent, which means that in such models we can find the following: 1. the expectancy of stress and inability to soothe because the closest individual cannot recognize the infant's state of stress. This disturbs the infant's core sense of safety. 2. difficulties in predicting what will happen



čaja i osjećaja partnera, 4. očekivanje dijadnih kontradiktornih komunikacija i konflikata. Regulacija afekta, koja je najvažnija posljedica *attachmenta* u ovom će slučaju biti nefunkcionalna i dijete će biti u produljenom stresu (17).

Prema Hoferu, unutarnji radni modeli, tj. unutarnje reprezentacije mogu biti povezane s unutarnjim biološkim odgovorima (npr. neka sjećanja uzrokuju crvenilo lica). Potpuno neovisna samoregulacija možda je ideal jer kao takva možda ne postoji ni u odrasloj dobi. Društvene interakcije mogu nastaviti imati važnu ulogu u svakodnevnoj regulaciji unutarnjih bioloških sustava tijekom života (18). Kako misle autori ovog teksta, to otvara mogućnost nastanka psihosomatskih poremećaja i tijekom života, u situacijama značajnih separacija.

## Interpersonalna neurobiologija

Kao što su teoretičari objektnih odnosa M. Klein (19,20), W. R. Fairbairn (21,22), J. Sandler (23), P. Williams (24) i drugi proučavali utjecaj dobrih i loših unutarnjih objekata na fantazijski, nesvjesni život čovjeka, tako i interpersonalni neurobiolozi proučavaju utjecaj nedovoljno dobroga unutarnjega radnog modela na pojavu psihosomatskih teškoća i bolesti, a sve to zbog slabosti emocionalne regulacije, tj. nedovoljne inhibicije autonomnog i endokrinog stanja pobuđenosti – od OFC-a.

within oneself and the partner, 3. difficulties recognizing own emotions and the partner's emotions, 4. expecting dyadic contradictory communications and conflicts. Affect regulation, which is the most significant outcome of attachment, will in this case be nonfunctional and the infant will experience prolonged stress (17).

According to Hofer, the internal working models, i.e. internal representations, can be associated with internal biological responses (e.g. some memories cause blushing). Completely independent self-regulation is perhaps the ideal, since it may not exist as such even in adulthood. Social interactions can continue to have a significant role in the everyday regulation of internal biological systems throughout life (18). The authors of this text maintain that this creates the possibility for the occurrence of psychosomatic disorders even throughout life, in situations of significant separations.

## Interpersonal neurobiology

Just as object relations theorists (M. Klein (19,20), W. R. Fairbairn (21,22), J. Sandler (23), P. Williams ((24) and others) studied the influence of good and bad internal objects on the fantasy, unconscious life of individuals, interpersonal neurobiologists study the influence of an insufficiently good internal working model on the occurrence of psychosomatic difficulties and diseases, all due to weak emotional regulation, i.e. insuf-

Istraživači interpersonalne neurobiologije (25-28) donose integraciju različitih znanstvenih smjerova (neurobiologija, razvojna neurokemija, neurologija, evolucijska biologija, sociobiologija, razvojna psihologija, razvojna psihoanaliza, dječja psihijatrija) i nastoje opisati kompleksnost psihosomatskih stanja. Važna postavka toga učenja jest da se u prvim godinama života moždane strukture važne za socijalno i emocionalno funkcioniranje (prefrontalni korteks) počinju razvijati ovisno o interpersonalnom iskustvu.

Vidjelo se da kroz interakciju s djetetom (koju dijete internalizira) majka regulira djetetova afektivna stanja, kao i razvoj središnjega i perifernoga živčanog sustava. Emocije koje su u početku regulirane od drugih (majka, njegovatelj) s vremenom, neurofiziološkim razvojem, postaju samoregulirane preko desnoga prefrontalnog korteksa. Desna je polutka esencijalna za prilagođeno interpersonalno funkcioniranje (26). Prve reprezentacije majke možda postoje u obliku mirisno-dodirno-toplinskih modela u interakciji OFC-a i prednjega temporalnog korteksa (28). Vjerujemo da tomu možemo pridružiti i vestibularne, kao i okusne reprezentacije pri dojenju. Usto, desna moždana polutka procesira informacije facijalne ekspresije, kontakt očima, ton i intenzitet glasa, ritam i brzinu verbalizacije, glazbu riječi, stav tijela, gestikulaciju.

efficient inhibition of autonomous and endocrine arousal - by the OFC.

Interpersonal neurobiology researchers (25-28) bring forward the integration of various scientific directions (neurobiology, developmental neurochemistry, neurology, evolutionary biology, sociobiology, developmental psychology, developmental psychoanalysis, child psychiatry) and make attempts to describe the complexity of psychosomatic conditions. An important assumption in these studies is that during the first years of life the brain structures critical for social and emotional functioning (the prefrontal cortex) start developing depending on the interpersonal experience.

It was evident that through interaction with her infant (which the infant internalizes) the mother regulates the infant's affective states, as well as the development of the central and the peripheral nervous systems. Emotions which are initially regulated by others (mother, caregiver), in time, through neurophysiological functioning, become self-regulated via the right prefrontal cortex. The right hemisphere is essential for adapted interpersonal functioning (26). The mother's first representations may exist in the form of olfactory-tactile-thermal models in the interaction of the OFC and the anterior temporal cortex (28). We believe that, in this aspect, we can also include the vestibular and gustatory representations during breastfeeding. Furthermore, the right hemisphere processes the information from facial expressions,



Ljudsko lice ima prednost u prenošenju afektivne informacije. Sve su ove neverbalne komunikacije dvosmjerne i zbog toga intersubjektivne. Smatra se da desna polutka njegovatelja komunicira s desnom djetetovom polutkom. Kritična za razvoj OFC-a jest faza *Practicinga* (prema M. Mahler) od 10./12. do 16./18. mjeseca života (27).

Majčina usklađena aktivnost brzo regulira hormonalne i imunosne promjene u djetetu. Na taj način interpersonalni odnosi reguliraju neuroendokrini i imunosni sustav. U slučaju neadekvatnoga ranog odnosa moguće su mnoge klasične psihosomatske bolesti koje uključuju i autoimunosne fenomene u svoju patofiziološku sliku (reumatoidni artritis, multipla skleroza, sistemski eritemski lupus) (26).

Deficiti u ranom odnosu majke i djeteta dovode do izostanka razvoja samoregulatornih funkcija.

Zbog nepotpuna strukturnog sazrijevanja orbitofrontalnog korteksa (koji je izravno uključen u homeostatsku regulaciju), njegovih veza s ostalim dijelom korteksa, kao i sa supkorteksom ograničen je njegov kapacitet da stvori afekt regulirajuću simboličku reprezentaciju. Zbog toga se pod stresom emocije doživljavaju kao primitivne senzomotorne nediferencirane tjelesne senzacije umjesto kompleksnih osjećaja koji imaju signalnu funkciju.

eye contact, voice tone and intensity, verbalization rhythm and speed, word musicality, body posture, gesticulation. The human face has an advantage when it comes to the transmission of affective information. All of these nonverbal communications are two-way and, therefore, intersubjective. It is believed that the caregiver's right hemisphere communicates with the infant's right hemisphere. The Practicing phase (according to M. Mahler) is critical for OFC development between the 10th/12th and 16th/18th month of an infant's life (27).

A mother's coordinated activity quickly regulates the hormonal and immune changes in the infant. In this way, interpersonal relationships regulate the neuroendocrine and immune systems. In case of an inadequate early relationship, the occurrence of numerous classic psychosomatic diseases is possible, and their pathophysiological picture also includes autoimmune phenomena (rheumatoid arthritis, multiple sclerosis, systemic lupus erythematosus) (26).

Deficits in the early mother-infant relationship lead to an absence of self-regulatory functions development.

Due to incomplete structural maturing of the orbitofrontal cortex (which is directly involved in homeostatic regulation), its connections to the other part of the cortex, as well as the subcortex, its capacity to create affect-regulating symbolic representation is limited. For this reason, in a state of stress emotions



Poremećena je i regulacija intenziteta afekta: smanjen je prag za iritaciju, agitaciju i afektivne ispade. Pretpostavlja se da je orbitofrontalni korteks važno središte za psihosomatske bolesti jer izravno inervira područja u meduli koja međusobno povezuju kardijalne, respiratorne i gastrointestinalne visceralne organe. On je najvažniji i u kontroli hipofizno-adrenalne osi. Orbitofrontalna stimulacija može uzrokovati fokalnu miokardnu nekrotičnu leziju sličnu onoj koja nastaje injekcijom katekolamina u kardijalnu arteriju. Orbitofrontalni korteks utječe na razinu kortizola u krvi čija kronično povišena razina može biti povezana s ranom aterosklerozom. Veze prefrontalnog korteksa sa solitarnim jezgrama imaju važnu ulogu u reguliranju baroreceptornog refleksa. Prefrontalna stimulacija povećava osjetljivost baroreceptora pa kronična hipertenzija može imati svoj uzrok u orbitofrontalnoj patologiji (26).

## Aleksitimija

Kod psihosomatskih bolesti česta je pojava aleksitimije. Gledano povijesno, P. Sifneos, utemeljitelj tzv. Bostonske grupe, uveo je naziv „aleksitimija“ kao poremećaj vrlo čest u psihosomatskih bolesnika, a koji označuje nesposobnost prepoznavanja i verbalizacije svojih osjećaja, kao i osiromašenje fantazijskog života.

are perceived as primitive undifferentiated sensorimotor physical sensations, instead of complex emotions with a signal function. The regulation of the affect intensity is also disturbed: there is a lower threshold for irritation, agitation and affective outbursts. It is assumed that the orbitofrontal cortex is an important center for psychosomatic diseases, since it directly innervates the areas in the medulla which interconnect the cardiac, respiratory and gastrointestinal visceral organs. It also plays the most important role in the control of the pituitary-adrenal axis. Orbitofrontal stimulation can cause focal myocardial necrotic lesions similar to those caused by an injection of catecholamines into the cardiac artery. The orbitofrontal cortex affects cortisol levels in the blood, and chronically elevated levels of cortisol may be associated with early atherosclerosis. The connections of the prefrontal cortex to the solitary nuclei play an important role in the regulation of the baroreceptor reflex. Prefrontal stimulation increases baroreceptor sensitivity, therefore chronic hypertension can have its cause in orbitofrontal pathology (26).

## Alexithymia

Alexithymia is a common occurrence in psychosomatic diseases. Historically speaking, P. Sifneos, the founder of the so-called Boston group, introduced the term “alexithymia” for a disorder very common among psychosomatic patients, which describes the inability to



Iz dosad navedenog može se izvesti sociobiološka osnova aleksitimije: neadekvatni rani odnosi majke i djeteta, bilo da su neusklađeni ili oskudni ili jednostavno insuficijentni (npr. nedostatak majčina adekvatnog zrcaljenja djetetovih afektivnih stanja), onemogućuju razvoj samoregulirajuće simbolične reprezentacije koja umiruje self u stanjima stresa, zbog čega se stanja pobuđenosti, umjesto u obliku emocija, doživljavaju kao primitivne senzomotorne nediferencirane tjelesne senzacije koje se prazne kroz patofiziološku funkciju perifernih organa.

### ***Velika brojnost publikacija***

Impozantna je literatura o aleksitimiji. U razdoblju od 1980. do 2020. godine objavljeno je više od 5000 znanstvenih publikacija (samo na engleskom jeziku) uz tendenciju znatnog povećanja. Početkom 80-ih godina prošloga stoljeća izdavalo se oko 10 publikacija godišnje, a u 2019. godini taj broj bio više od 400 publikacija (28). Ipak, unatoč velikoj produkciji, uzroci aleksitimije ostaju enigmatični.

### ***Definicija***

U preglednom članku Taylora i Bogbyja navedeno je da je aleksitimija dimenzionalna crta osobnosti (a ne kategorijalna), što znači da može povremeno biti prisutna u svih ljudi i da ima svoj

recognize and verbalize one's feelings, in addition to an impoverished fantasy life.

The sociobiological basis of alexithymia can be deduced from the above mentioned: inadequate early mother-infant relationships, whether uncoordinated or scarce or simply insufficient (e.g. lack of adequate mirroring of the infant's affective states by the mother), prevent the development of self-regulating symbolic representation which calms the self in states of stress, due to which, instead of in the form of emotions, the states of arousal are perceived as primitive sensorimotor undifferentiated physical sensations which are relieved through the pathophysiological function of peripheral organs.

### ***Numerous publications***

There is an impressive amount of literature on alexithymia. Over 5000 scientific publications were published in the period between 1980 and 2020 (in English only), with a tendency of significant growth. Around 10 publications were published annually in the early 1980s, while the number of publications issued in 2019 amounted to over 400 (28). Nevertheless, despite the large production, the causes of alexithymia remain enigmatic.

### ***Definition***

In their review article, Taylor and Bagby stated that alexithymia is a dimensional personality trait (not a categorical one),

raspon od slabije do jače izraženih slika. Karakterizirana je teškoćama u prepoznavanju i verbalizaciji osjećaja, teškoćama u razlikovanju osjećaja i tjelesnih senzacija, ograničenim fantazijskim kapacitetom, prema van orijentiranim kognitivnim stilom (konkretno, činjenično mišljenje), manjkom empatije i distancijom u interpersonalnim odnosima uz povremene provale bijesa (30).

### ***Etiologija***

U etiologiji se navode genetski utjecaj s oko 30 – 33 %, nesigurni *attachment*, psihološka trauma u djetinjstvu (zanimarivanje, napuštanje, tjelesno zlostavljanje), kao i katastrofična trauma u kasnijem životu (30). Prema Tayloru, majka i dojenče u nekoj su vrsti biološke i emocionalne simbioze i funkcioniraju kao regulatorni selfobjekti, jedno za drugo, kroz senzomotorne puteve (31). Zbog emocionalne nedostupnosti ili slabog usklađivanja primarnog njegovatelja i djeteta moguć je izostanak razvoja „afektivnog selfa“. S vremenom se neadekvatne interakcije internaliziraju i stvaraju insuficijentne unutarnje reprezentacije selfa i objekta što smanjuje sposobnost samoregulacije pobuđenog afekta (31).

Neurofiziološka istraživanja donose nove slikovne metode prikazivanja funkcija mozga npr. pozitronska emi-

which means that it could occasionally develop in all people, and it ranges from weaker to more pronounced manifestations. It is characterized by difficulty identifying and describing feelings, difficulty distinguishing feelings from physical sensations, limited imaginal capacity, externally oriented cognitive style (more precisely, factual thinking), lack of empathy and distance in interpersonal relationships with occasional outbursts of rage (30).

### ***Etiology***

The etiology includes approximately 30-33% of genetic influence, insecure attachment, psychological trauma during childhood (neglect, abandonment, physical abuse), as well as catastrophic trauma in later life (30). According to Taylor, a mother and her infant are in some sort of a biological and emotional symbiosis and function as regulatory self-objects, one for the other, through sensorimotor pathways (31). Due to emotional unavailability or poor coordination between the primary caregiver and the infant, it is possible for the “affective self” to not develop. In time, the inadequate interactions are internalized and insufficient internal representations of the self and of the object are created, which reduces the ability to self-regulate the stimulated affect (31).

Neurophysiological studies brought forward new imaging methods of presenting brain functions, e.g. positron emission



sijska tomografija (PET) pokazuje kod aleksitimije smanjenu aktivnost u korpusu kalozum i cingularnom korteksu. Funkcionalna magnetna rezonancija mozga (NMR) pokazuje da prefrontalni korteks slabo regulira odgovore amigdala na emocionalni stimulus u aleksitimičnim osoba. Neurofiziološka istraživanja pokazuju nizak vagalni tonus kod aleksitimije (koji smanjeno ublažuje reakcije simpatikusa). Istraživači snova registriraju kraće trajanje snova i slabu imaginaciju u snovima u aleksitimičnim osoba (32). Drugi istraživači a pomoću fNMR-a nalaze kod vanjskih emocionalnih poticaja smanjenu aktivnost u ACC-u, desnoj inzuli i amigdalama. Kod fantazijske aktivnosti smanjena je aktivnost u stražnjemu cingularnom korteksu, a pri socijalnim poticajima smanjena je aktivnost u medijalnom PFC-u. Nasuprot tomu, kod nekih tjelesnih poticaja pojačana je aktivnost u odgovarajućim somatosenzornim područjima mozga (33). Dakle, kod aleksitimije postoji pojačana reaktivnost na somatske poticaje, a smanjena reaktivnost na emocionalne, fantazijske i socijalne podražaje.

Istraživači kognitivne neuropsihologije uočavaju ove promjene: dominaciju lijeve ili deficit desne polutke, disfunkciju corpusa callosuma, disfunkciju prednjeg (koji je više afektivan) i dorzalnog područja (koji je više kognitivan) anteriornoga cingularnog korteksa (ta

tomography (PET), which shows reduced activity in the corpus callosum and the cingulate cortex in individuals with alexithymia. Functional nuclear magnetic resonance (NMR) of the brain shows that, in individuals with alexithymia, the prefrontal cortex poorly regulates the amygdala responses to emotional stimuli. Neurophysiological studies show a low vagal tone in alexithymia (which displays lower activity in terms of reducing the sympathetic nervous system responses). In patients with alexithymia, dream researchers register shorter duration of dreams and weak imagination in dreams (32). Using fNMR, other researchers observed the following: reduced activity in the ACC, right insula and the amygdalas during external emotional stimuli. Reduced activity in the posterior cingulate cortex during fantasy activity, and reduced activity in the medial PFC during social stimuli. In contrast, in cases of some physical stimuli the activity in the corresponding somatosensory areas of the brain is increased (33). Increased reactivity to somatic stimuli is, therefore, present in alexithymia, while the reactivity to emotional, fantasy and social stimuli is reduced.

Cognitive neuropsychology researchers observed the following changes: dominance of the left or deficit of the right hemisphere, corpus callosum dysfunction, dysfunction of the frontal (more affective) and dorsal (more cognitive) areas of the anterior cingulate cortex (these two parts function separately in alexithymia),

dva dijela u aleksitimiji funkcioniraju razdvojeno), operativno presijecanje medijalnog dijela OFC-a dovodi do kliničke slike aleksitimije (zaravnjenost osjećaja, odsutnost emocionalne spontanosti, deficit u prepoznavanju emocionalne ekspresije, reduciranje empatije, oskudnost imaginacije, reducirana facijalna ekspresija, povremena dezinhibicija i nasilno ponašanje). Nadalje, smanjena je aktivacija inzule koja regulira autonomne komponente emocija i regulira negativne emocije kao što su strah, ljutnja odvratnost, glad, žeđ, bol, stres. Možda zbog toga aleksitimični bolesnici mogu doživljavati više boli i biti skloniji hipohondriji i traženju pomoći. Kad se promatra sazrijevanje CNS-a, amigdale i prednja komisura su funkcionalne vrlo rano u životu, dok prefrontalni korteks (PFC) i corpus callosum (što podrazumijeva interakciju s lijevom hemisferom koja je više kognitivna) potpunu zrelost postižu pri kraju adolescencije (9). To upućuje na veliku važnost tzv. vanjskih regulatora (njegovatelj i sl.).

### ***Prevalencija i epidemiologija***

Smatra se da je prevalencija aleksitimije u općoj populaciji oko 10 %, a kod psihosomatskih bolesti oko 36 – 57 %, dok je kod anoreksije prevalencija i do 77 % (34). Oko 30 % tjelesno bolesnih ima aleksitimiju (35). U jednom epidemiološkom istraživanju na 12 000

operational section of the medial part of the OFC leads to a clinical picture of alexithymia (emotional flatness, absence of emotional spontaneity, deficit in recognizing emotional expressions, reduced empathy, lack of imagination, reduced facial expressions, occasional disinhibition and violent behavior). Furthermore, there is a reduced activation of the insula which regulates the autonomous components of emotions and regulates negative emotions such as: fear, anger, repulsion, hunger, thirst, pain, stress. Perhaps this is the reason why patients with alexithymia can experience more pain and are more prone to hypochondria and asking for help. When observing the maturation of the CNS, the amygdala and the front anterior commissure are functional very early in life, while the prefrontal cortex (PFC) and the corpus callosum (which implies interaction with the more cognitive left hemisphere) reach full maturity at the end of adolescence (9). This points to a great significance of the so-called external regulators (caregiver etc.)

### ***Prevalence and epidemiology***

It is believed that the prevalence of alexithymia in the general population is around 10%, while for psychosomatic diseases it amounts to approximately 36%-57%, and in case of anorexia it amounts to up to 77% (34). Approximately 30% of physically ill individuals suffer from alexithymia (35). An epidemiological study conducted on a sample of 12000 children found that individuals



djece nađeno je da su aleksitimичne osobe češće bila neželjena djeca, da su rođena u obitelji s mnogo djece i da su češće rasle u seoskoj sredini (36).

### ***Ljestvice za dijagnosticiranje aleksitimije. Temperament i emocionalna inteligencija***

Brojne su ljestvice (najpoznatija je TAS-20, Toronto Alexithymia Scale) u uporabi za prepoznavanje aleksitimije koja tijekom vremena pokazuje relativnu stabilnost (37,38). Aleksitimija nema jedinstvenu dimenziju povezanu s karakterom ili temperamentom. Jaka je aleksitimija obrnuto proporcionalno povezana sa psihološkom osviještenošću i emocionalnom inteligencijom (koja može biti intrapersonalna i interpersonalna), kao i s mentalizacijom.

### ***Mehanizmi obrane kod aleksitimije***

Pozitivna je korelacija aleksitimije s nezrelim mehanizmima obrane (poricanje, projekcija, *acting out*, disocijacija, autistična fantazija, rascijep, somatizacija), manje je pozitivna korelacija s neurotskim mehanizmima obrane (poništenje, reaktivna formacija, idealizacija), a negativna je korelacija sa zrelim mehanizmima obrane (sublimacija, humor, supresija). Pri jakoj aleksitimiji često je izbjegavanje problema ili vrtnja u krugu

with alexithymia were most commonly unwanted children, that they were born in families with many children and were more often raised in a rural environment (36).

### ***Alexithymia scales. Temperament and emotional intelligence.***

Numerous scales (the most notable one being TAS-20, the Toronto Alexithymia Scale) are used to diagnose alexithymia which shows relative stability over time (37, 38). There is no unique dimension to alexithymia that would be associated with one's character or temperament. Strong alexithymia is inversely associated with psychological awareness and emotional intelligence (which can be intrapersonal and interpersonal), as well as with mentalization.

### ***Defense mechanisms in alexithymia***

There is a positive correlation between alexithymia and immature defense mechanisms (denial, projection, acting out, dissociation, autistic fantasy, splitting, somatization), a less positive correlation with neurotic defense mechanisms (undoing, reaction formation, idealization), and a negative correlation with mature defense mechanisms (sublimation, humor, suppression). In strong alexithymia, problem avoidance or a whirlwind of emotions which do not solve the

emocija koje ne rješavaju problem (briga, ljutnja, okrivljavanje sebe) (31).

### ***Aleksitimija kod psihosomatskih, ali i drugih bolesti***

Aleksitimija je povezana ne samo sa psihosomatskim bolestima (hipertenzija, upalne bolesti crijeva, funkcionalne gastrointestinalne bolesti) već je nađena i u ovisnika o narkoticima, pri PTSP-u (napose ratnom), kod somatizacije, hipohondrije, paničnog i opsektivno-kompulzivnog poremećaja, kao i pri anoreksiji i bulimiji. Veći je mortalitet pacijenata s kardiovaskularnim bolestima i u bolesnika na dijalizi koji imaju i izraženu aleksitimiju (38).

### ***Slaba integracija ili rascijep u neverbalnim emocionalnim shemama kod aleksitimije***

Bucci postavlja tzv. multiplu teoriju kodiranja (MTK) s obzirom na Freudovu dualnu teoriju kodiranja prema kojoj postoje primarni proces (vezan uz neverbalno) i sekundarni proces (vezan uz verbalno). Prema MTK-u, primarni proces ima supsimboličnu i simboličnu formu. Supsimbolična forma dominira u desnoj hemisferi u kojoj se događa višekanalno paralelno analogno procesiranje bez integracije. Drugim riječima, usporedo se i neprekidno obrađuju informacije: senzorne, motoričke,

problem (worry, anger, self-blame) are often present (31).

### ***Alexithymia in psychosomatic and other diseases***

Alexithymia is associated not only with psychosomatic diseases (hypertension, inflammatory bowel diseases, functional gastrointestinal diseases), but has also been identified in narcotics addicts, PTSD (particularly war PTSD), somatization, hypochondria, panic disorder and obsessive-compulsive disorder, as well as anorexia and bulimia. There is a higher mortality rate among patients with cardiovascular diseases, as well as those in dialysis, who also suffer from expressed alexithymia (38).

### ***Weak integration or splitting in nonverbal emotional schemas in alexithymia***

Bucci describes the so-called multiple code theory (MCT) in relation to Freud's dual code theory, according to which there is a primary process (relating to the nonverbal) and a secondary process (relating to the verbal). According to the MCT, the primary process has a subsymbolic and symbolic form. The subsymbolic form dominates in the right hemisphere, in which multi-channel parallel analog processing without integration occurs. In other words, there is a parallel and continuous processing of the following information: sensory, motoric, viscer-



visceralne, kao i neprocesirane emocije. Sve to čini temelj tzv. emocionalne sheme. Novost je uvođenje simbolične forme unutar primarnoga procesa koja obavlja integraciju i organizaciju prethodno navedenih paralelnih procesa (bez integracije) i te procese povezuje sa slikama i riječima pa tako nastaju prototipske self i objektne reprezentacije, tj. slike njegovatelja i prirode interakcije djeteta s njegovateljem. Iz tih primarnih reprezentacija dalje se razvijaju simbolične self i objektne reprezentacije. Sljedeći je, viši stupanj integracije još kompleksnije usvajanje jezika, sposobnost verbalizacije sadržaja (a ne samo označivanja), a završni stadij jest stadij razmišljanja i mogućnost reorganizacije. Ovi, završni procesi uglavnom se zbivaju u lijevoj hemisferi. Emocionalne su sheme u međusobnoj dvostranoj interakciji sa sjećanjima i jezikom (npr. neko sjećanje može aktivirati emocionalnu shemu ili neki doživljaj može aktivirati sjećanje i sl.). Od najranijih dana života kvalitetan interpersonalni odnos dojenčeta i majke utječe na bolju integraciju emocionalnih shema, što je temelj za kasniju bolju toleranciju intenzivnih afekata, za osjećaj razdvojenosti od majke i brigu o sebi. Kod psihosomatskih poremećaja i aleksitimije jače su disocijacije u neverbalnim emocionalnim shemama (ili je slaba integracija ili nastaje rascijep unutar shema), što stvara višu razinu

al and unprocessed emotions. All of the above creates the basis of the so-called emotional schema. A novelty in this regard is the introduction of the symbolic form within the primary process which integrates and organizes the previously mentioned parallel processes (without integration), and connects these processes with images and words, thus creating the prototypical self- and object representations, i.e. images of the caregiver and the nature of the infant's interaction with the caregiver. The symbolic self- and object representations further develop from these primary representations. The next higher degree of integration is an even more complex language acquisition, and the ability to verbalize (not only label) content, while the final stage is the stage of thinking and ability to reorganize. These final processes mainly take place in the left hemisphere. Emotional schemas are in a mutual two-way interaction with memories and language (e.g. a memory can activate an emotional schema or an experience can activate a memory etc.). A quality interpersonal relationship between an infant and its mother promotes better integration of emotional schemas from the first days of life, which represents the basis for a later better tolerance of intense affects, the feeling of separation from the mother and self-care. In psychosomatic disorders and alexithymia, dissociations in nonverbal emotional schemas are more pronounced (or there is weak integration or splitting occurs within the schemas), which creates a higher level of physiolog-



fiziološke aktivacije i u konačnici psihosomatski poremećaj (39).

Prisutnost aleksitimije negativno utječe na liječenje npr. kod uvidu orijentiranih oblika individualne i grupne psihoterapije. Otežava oporavak od depresije i od funkcionalnih gastrointestinalnih simptoma.

### TERAPIJSKI PRISTUP PSIHOSOMATSKIM BOLESTIMA I ALEKSITIMIJI

U individualnoj psihoterapiji (i psychoanalizi) važno je pitanje transfera i kontratransfera. Nemiah i Sifneos primjećuju da psihosomatski pacijent u terapiji slabo verbalizira, nije spontan, drži se distancirano, odnos s njim se ne razvija, nego je blijed, bezbojan, beživotan, dosadan, bez ljudske topline i rezonancije. To u kontratransferu izaziva osjećaje frustracije, sterilnog i neproduktivnog odnosa (40).

M'Uzan primjećuje da se u terapiji pojavljuju jednostavne izolirane transferne reakcije, nema prave transferne neuroze, pacijent je u dijadi, nije dospio do triangulacije. Konvencionalna je moralnost podložna kolapsu, kada dolazi do provale stava neprepoznatljive okrutnosti (41).

Taylor u kontratransferu navodi mogućnost osjećaja očaja i beznadnosti (42),

ical activation and, ultimately, leads to a psychosomatic disorder (39).

The presence of alexithymia has a negative effect on the treatment, e.g. in insight-oriented forms of individual and group psychotherapy. It also renders the recovery from depression and from functional gastrointestinal symptoms more difficult.

### THERAPEUTIC APPROACH TO PSYCHOSOMATIC DISEASES AND ALEXITHYMIA

In individual psychotherapy (and psychoanalysis) the issue of transference and countertransference is important. Nemiah and Sifneos note that a psychosomatic patient in therapy has difficulty verbalizing, lacks spontaneity, keeps their distance, the relationship with the patient does not develop, but remains weak, colorless, lifeless, boring, without human warmth and resonance. In countertransference, this causes feelings of frustration, of a sterile and non-productive relationship (40).

M. Uzan observes that simple isolated transference reactions occur during therapy, there is no real transference neurosis, the patient is in a dyad and does not reach triangulation. Conventional morality is prone to collapse when an attitude of unrecognizable cruelty breaks through (41).

Taylor states that in countertransference there is a possibility of experienc-



a kod izaženije aleksitimije moguće su negativne reakcije u terapeuta, što pridonosi slabijemu terapijskom rezultatu. Pitamo se je li ovdje na djelu projektivna identifikacija, kada pacijent stavlja terapeuta u svoju nekadašnju poziciju beznadnoga djeteta.

Mc Dougall uočava da je u odnosu s terapeutom malo transfernih osjećaja, a u kontratransferu registrira osjećaj frustracije, paralizu analitičke funkcije, dosadu i krivnju (zbog terapijske insuficijencije) (43). Ipak, kroz kontratransfer i pacijentovu projektivnu identifikaciju terapeut može naslutiti izvornu preverbalnu psihičku pacijentovu katastrofu (44).

Ruesch se bavio terapijom infantilnih osobnosti u koje je ubrajao i psihosomatske bolesnike. Njihova terapija traje godinama. Pacijent preko simbioze mora doći do separacije i individualizacije. Mora naučiti tolerirati unutarnje znakove (emocionalne i tjelesne) i izražavati svoje osjećaje bez kritiziranja drugih. Terapeut mora bezuvjetno prihvatiti bolesnika, mora biti dostupan, vidljiv, razumljiv, postojan, mora pokazati svoje osjećaje da bi bolesnik mogao od njega učiti. Terapijski je postupak zapravo dječja psihoterapija s kronološki odraslim pacijentom (45).

Krystal predlaže modifikaciju psihoterapijske tehnike za bolesnike s aleksitimijom: pomak fokusa s analize sadr-

ing feelings of despair and hopelessness (42), while negative reactions may occur in the therapist in case of a more pronounced alexithymia, which contributes to a reduced therapeutic outcome. We wonder whether projective identification is at play at this point, when a patient places the therapist in their own former position of a hopeless child.

Mc Dougall observes that there are few transference emotions in the relationship with the therapist, while a sense of frustration, paralysis of analytical function, boredom and guilt (due to therapeutic insufficiency) are registered in countertransference (43). Nevertheless, through countertransference and patient's projective identification, the therapist can sense the patient's original preverbal psychological catastrophe (44).

Ruesch addressed the treatment of infantile personalities, which according to him, also included psychosomatic patients. Their treatment lasts for years. Through symbiosis, the patient needs to reach separation and individuation. They need to learn to tolerate internal signs (emotional and physical) and to express their feelings without criticizing others. The therapist needs to accept the patient unconditionally, needs to be accessible, visible, understandable, consistent, needs to express their own feelings in order for the patient to be able to learn from them. The treatment process is, in fact, child psychotherapy with a chronologically adult patient (45).

žaja na formu komunikacije. Bolesniku treba pomoći da shvati prirodu aleksitimičnog poremećaja, pomoći mu prepoznati emocije kao korisne signale, pomoći mu razviti toleranciju prema afektima. Terapeut pomaže bolesniku (kao roditelj djetetu) da točno označi (dade ime) emocije i da ih postupno verbalizira. Terapeut komentira, rasvjetljuje i konfrontira bolesnika u vezi s vanjskim doživljajima. S vremenom se može pomaknuti naglasak na direktnu transfernu interpretaciju (46).

Stefanos upućuje na to da u terapiji treba pomoći bolesniku da otkrije vezu između njegovih, bolesnikovih tjelesnih reakcija i emocija prema terapeutu. Predlaže modifikaciju psihoterapije za psihosomatske bolesnike uz primjenu teorija temeljne greške (Balint), teorije separacije individuacije (Mahler, Searles), narcizma (Kohut), kao i autora francuske psihosomatske škole (Marty, M'Uzan) (47).

Sifneos preporučuje suportivnu psihoterapiju za primarno aleksitimične psihosomatske pacijente (genetski utjecaj), a za bolesnike sa sekundarnom aleksitimijom (razvojnou) – modificirane psihodinamske terapije. Ako je bolesnik sposoban za verbalizaciju osjećaja, za imaginaciju i za unutarnje kontejniranje moguća je psihoanaliza. Ako je sposoban za verbalizaciju i imaginaciju, može se primijeniti psi-

Krystal suggests a modification of the psychotherapy technique for patients with alexithymia: a focus shift from content analysis to the form of communication. The aim is to help the patient understand the nature of the alexithymic disorder, help them recognize emotions as useful signals, and help them develop tolerance towards affects. The therapist helps the patient (like a parent helps their child) to accurately label (name) their emotions and to gradually verbalize them. The therapist comments, clarifies and confronts the patient when it comes to their external experiences. In time, focus can be shifted towards direct transference interpretations (46).

Stefanos instructs that therapy needs to help the patient discover the connection between their own, the patient's physical reactions and emotions towards the therapist. He suggests a modification of psychotherapy for psychosomatic patients by using the basic fault theory (Balint), separation individuation theory (Mahler, Searles), narcissism theory (Kohut), as well as French psychosomatic school theory (Marty, M Uzan) (47).

Sifneos recommends supportive psychotherapy for psychosomatic patients with primary alexithymia (genetic influence), while for patients with secondary (acquired) alexithymia - he recommends modified psychodynamic therapies. If the patient is capable of verbalizing their feelings, imagining and internal containment, psychoanalysis is possible. If they are capable of verbalizing and imagining,



hoanalitička psihoterapija. Ako je pak sposoban za verbalizaciju i kontejniranje, može se primijeniti Krystalova modificirana psihoterapija (48).

U terapiji je, smatraju interpersonalni neurobiolozi, transferno-kontratanstferna transakcija nesvjesna neverbalna komunikacija desnog mozga – uma – tijela bolesnika i mozga – uma – tijela terapeuta. U kontratransferu terapeut prati svoje vlastite tjelesno utemeljene afektivne odgovore na bolesnikove mimične, gestualne i auditivne komunikacije. Stalna percepcija vlastitoga somatskog kontratransfera temeljni je element intersubjektivnosti između bolesnika i terapeuta (27).

Bucci predlaže da se u početku terapije simptomi prihvate kao „objekti” i da ih se pokuša povezati s kontekstima u kojima se pojavljuju prije bilo kojih interpersonalnih objekata. Na taj bi se način mogle oživjeti stare emocionalne sheme u koje bi mogli ući i novi objekti kao npr terapeut (30). U kasnijim radovima Bucci ističe važnost terapeutova korištenja kontratransfernim tjelesnim stanjima (koja mogu biti pobuđena reakcijom zrcalnih neurona), a zatim preko vlastita procesa simbolizacije doći do slika i osjećaja koji preciznije govore o pacijentovoj psihološkoj situaciji (49).

Osim individualne psihoterapije, moguć je i **grupni psihoterapijski pristup**

psychoanalytic psychotherapy is applicable. If they are capable of verbalizing and containment, Krystal's modified psychotherapy is applicable. (48)

Interpersonal neurobiologists believe that, in therapy, the transference-countertransference transaction is an unconscious nonverbal communication between the right brain-mind-body of the patient and the brain-mind-body of the therapist. In countertransference, the therapist monitors their own bodily-based affective responses to the patients' mimic, gestural and auditory communications. A constant perception of one's own somatic countertransference represents the basic element of intersubjectivity between the patient and the therapist (27).

Bucci suggests that at the start of therapy the symptoms should be accepted as "objects" and attempts should be made to connect them with the contexts in which they occur before any interpersonal objects. In this way, old emotional schemas could be revived in which new objects could be introduced, such as, e.g. a therapist. (30). In her later works, Bucci emphasizes the importance of the therapist's use of countertransference physical states (which could be stimulated by mirror neurons reactions), and then, through their own symbolization process, reaching the images and feelings that recount the patient's psychological situation more precisely (49).

In addition to individual psychotherapy, a **group psychotherapy approach** is

bilo u kombinaciji bolničkih i ambulantskih grupa (50) ili samo ambulantski. Ford i Long u grupi su se više fokusirali na ovdje i sada nego na tamo i tada i pokušavali su potaknuti ekspresiju i prepoznavanja afekta. Navode da to nije bio lak zadatak. Bile su izražene ovisnost pacijenata i projekcije na partnere. Čest afekt bila je ljutnja, ali bi pacijenti taj afekt negirali ili jednostavno ne bi došli na iduću seansu. Najveći je problem bio neredovito dolaženje, što je, naravno, štetilo kohezivnosti i kontinuitetu terapije. Na kraju terapije neki su se pacijenti djelomično poboljšali (interpersonalno, u bračnim odnosima, neki su imali manje simptoma). Za većinu je pacijenata korištenje tjelesnim simptomima postalo karakterološko (51).

Apfel i suradnici su u grupi imenovali pacijentove osjećaje i o njima raspravljali. Članovima bi postavili pitanje kako su se osjećali u nekoj situaciji pa se o tome raspravljalo. Imaginacija je bila insuficijentna (52).

Roberts primjećuje da se u transferu prema terapeutu (kao idealiziranoj onipotentnoj figuri) odigravao *enactment* primitivne simbioze idealne majke i dojenčeta, čime se obezvrjeđivalo postojanje ostatka grupe. Rijetke su bile seksualne i agresivne fantazije. Pravi psihosomatski bolesnici dosta su rijetko dolazili i kod njih je bilo češće

also possible, either as a combination of hospital and outpatient groups (50) or only through outpatient therapy. In a group setting, Ford and Long focused more on the here and now, rather than on the there and then, and attempted to encourage expression and recognition of affects. They maintain that this was not an easy task. The patients' dependence and projections on their partners were pronounced. Anger was a common affect, however, the patients would negate this affect or would simply miss the next session. The biggest issue was irregular attendance, which, naturally, had a negative effect on the cohesion and continuity of the therapy. At the end of the therapy sessions, some patients showed partial improvement (interpersonally, in their marital relations, some had fewer symptoms). For the majority of the patients, the use of physical symptoms became characteristic (51).

Apfel et al. verbalized the patients' feelings in the group sessions and discussed them. They would ask the group members how they felt in a certain situation and then discussed it. Imagination was insufficient (52).

Roberts observed that an enactment of the primitive symbiosis of an ideal mother and her infant played out during transference towards the therapist (as an idealized omnipotent figure), which devalued the existence of the rest of the group. Sexual and aggressive fantasies were rare. Real psychosomatic patients attended the sessions very rarely and



odustajanje. Psihosomatski bolesnici nisu razumjeli grupni kontekst ni emocionalne veze u grupi. U kontratransferu su se pojavljivali teško održavanje pažnje, osjećaj besmisla i otvorena dosada. Predlažu se modifikacije tehnike u smislu veće aktivnosti terapeuta, suportivni pristup, izbjegavanje preranih interpretacija, treba oživjeti i kontejnirati osjećaje u bolesnika, identificirati potencijalno odustajanje i otvoreno o tome razgovarati (53).

Brown navodi da je terapija psihosomatskih bolesnika teška i dugotrajna, često je potrebno nekoliko godina za stvarne karakterološke promjene, moguća su i psihotična pogoršanja ako bolesnici imaju slab ego. Suportivnost je važnija od interpretacije. Važnost tjelesnih simptoma treba biti otkrivena ili čak i kreirana za mentalizaciju. Grupa mora tolerirati i kontejnirati teške osjećaje kao npr. anksioznost, bol, bespomoćnost, ovisnost, bijes. Grupa treba poticati komunikaciju na dubljoj, primitivnijoj razini, a voditelj treba osvijestiti svoje tjelesne kontratransferne osjećaje i slušati svojom utrobom, kao i svojim ušima (54).

Cividini Stranić vidi problem psihosomatskih pacijenata u blokadi komunikacije između tjelesnoga i psihičkoga stanja. Ta je veza ili prekinuta ili nikad nije niti bila uspostavljena. Psihodinamički su moguće različite situacije:

they would quit the sessions more often. Psychosomatic patients did not understand the group context or the emotional relationships in the group. In countertransference, they displayed the following: difficulty maintaining attention, a sense of futility and plain boredom. The following modifications of the technique are hereby proposed: increased activity by the therapist, supportive approach, avoidance of premature interpretations, reviving and containment of feelings in patients, identifying potential quitting and openly discussing the issue (53).

Brown observes that the treatment of psychosomatic patients is difficult and long-lasting, several years are often necessary in order to achieve real character changes, and psychotic worsening of the condition is possible if the patients have a weak Ego. Support is more important than interpretation. The meaning of physical symptoms needs to be discovered or even created for mentalization purposes. The group needs to tolerate and contain difficult feelings such as anxiety, pain, helplessness, dependence, rage. The group needs to encourage communication on a deeper, more primitive level, and the conductor needs to become aware of their own bodily-based countertransference emotions and listen with their gut, as well as with their ears (54).

Cividini Stranić believed that the problem in psychosomatic patients lies in the blocked communication between the physical and the mental state. This connection is either interrupted or was

strah od bliskosti ili težnja fuziji, potiskivanje agresije, loši rani odnosi s njegovateljima (55).

Prema Spitzeru, što je teža aleksitimija, veći su interpersonalni problemi. Grupna je psihoterapija korisna za reduciranje disfunkcionalnoga interpersonalnog ponašanja (56).

Taylor misli da grupna terapija omogućuje širok spektar interpersonalnih situacija za bolesnike s aleksitimijom da dožive emocije i da uče o njima. U istoj grupi ne bi trebalo biti više od dva do tri pacijenta s aleksitimijom. Neka istraživanja potvrđuju pozitivan utjecaj grupne psihoterapije, a u nekih se (triput tjedno, uvidu orijentiranih grupa) i na kraju terapije pokazuje visok stupanj relativne stabilnosti aleksitimije (30).

Nitsun je skovao naziv „antigrupa“ za destruktivne procese u grupi koji prijete njezinu funkcioniranju. To mogu biti: nepovjerenje, narcističke povrede, doživljaj grupe kao frustrirajuće i odbacujuće, agresivne konfrontacije, agresivne projekcije, *acting out*, projektivna identifikacija, regresija. Kada u grupi dominiraju antigrupna stanja, voditelj bi morao biti aktivniji, ali u tim fazama grupe njegov kontratransfer može biti intenzivniji i teži za kontrolu tako da njegova integrirajuća funkcija može biti oslabljena. Antigrupa, osim svoga

never established in the first place. From a psychodynamic viewpoint, various situations are possible: fear of intimacy or desire for fusion, suppression of aggression, poor early relationships with caregivers (55).

According to Spitzer, the more severe the alexithymia, the greater are the interpersonal problems. Group psychotherapy is useful for reducing dysfunctional interpersonal behavior (56).

Taylor believes that group therapy enables a wide spectrum of interpersonal situations in which patients with alexithymia can experience emotions and learn about them. There should not be more than two or three patients with alexithymia in one group. Some studies confirm the positive influence of group psychotherapy, while in some cases (three times a week, in terms of oriented groups) it results in a high degree of relative stability of alexithymia at the end of therapy sessions (30).

Nitsun coined the term “anti-group”, referring to destructive processes within a group which threaten its function. These can include the following: mistrust, narcissistic injuries, perception of the group as frustrating and rejecting, aggressive confrontations, aggressive projections, acting out, projective identification, regression. When anti-group states dominate within a group, the conductor should be more active, however in these group phases his countertransference can be more intense and harder to con-



destruktivnog aspekta, ima i svoj, u dijalektičkome smislu, poticajni aspekt u smislu poticanja, provokacije i narušavanja psihodinamičkoga mrtvila u pretjerano kohezivnoj grupi. Voditelj bi trebao pomagati tom finom balansu između progresivnih i regresivnih stanja u grupi (57).

Drugim riječima, fini balans između antigrupe i progrupe može biti narušen u smjeru destruktivnih obilježja antigrupe, a posljedica toga može biti ispadanje člana iz grupe.

## ZAKLJUČAK

Um i tijelo dvije su strane istog novčića (1). Stanične signalne mreže daju strukturu beskrajno složenim intracelularnim i intercelularnim molekularnim interakcijama (62-64) koje omogućuju stalnu dvosmjernu komunikaciju između makrosvijeta (objektni odnosi) (17-28) i mikrosvijeta (biokemija i epigenetika) (10-16) u normalnom, kao i u patološkom funkcioniranju organizma.

U stanjima stresa mreže se mijenjaju da bi omogućile stanici da brzo reagira na vanjske uvjete (62). Na biokemijskoj razini, u reakciji na stres, cijeli sustav HHA osi pojačano je pobuđen. Dok je akutni stres najčešće korisna reakcija, kronični stres ima destruktivan utjecaj na mozak (3).

trol, therefore weakening his integrative function. Despite its destructive aspect, from an academic point of view the anti-group has its own encouraging aspect in the sense that it encourages, provokes and disrupts the psychodynamic stagnation in an overly cohesive group. The conductor should assist this fine balance between progressive and regressive states in the group (57).

In other words, the fine balance between an anti-group and pro-group can be disturbed leaning towards the destructive characteristics of the anti-group, and this could result in an exclusion of a member from the group.

## CONCLUSION

The mind and the body are two sides of the same coin (1). Cellular signaling networks give structure to the infinitely complex intra- and intercellular molecular interactions (62-64) that enable constant two-way communication between the macro world (object relations) (17-28) and the micro world (biochemistry and epigenetics) (10-16) in normal, as well as in pathological functioning of the body.

In a state of stress, the networks change in order to enable the cell to quickly react to the external conditions (62). On a biochemical level, when reacting to stress, the entire HPA axis system experiences increased arousal. While acute stress is most commonly a useful reaction, chron-



Za razvoj djeteta bitan je odnos s njegovateljem. Neadekvatni rani odnosi s njegovateljem imaju trostruko negativno djelovanje: stvaraju pojačanu osjetljivost na stresne situacije u životu, onemogućuju razvoj unutarnje umirujuće strukture i blokiraju razvoj „emocionalnog selfa“ (7-9). Emocije koje su u početku regulirane od drugih (majka, njegovatelj) s vremenom, neurofiziološkim razvojem, postaju samo-regulirane, a preko desnoga prefrontalnog korteksa. Ako nema emocionalne stimulacije od njegovatelja, djetetov mozak neće imati pravi poticaj za razvoj struktura važnih za nastanak i procesiranje emocija (65). Zbog toga se pod stresom emocije doživljavaju kao primitivne senzomotorne nediferencirane tjelesne senzacije umjesto kompleksnih osjećaja koji imaju signalnu funkciju. Tu se otvara put za nastanak psihosomatskih bolesti.

Psihosomatski poremećaji mogu biti praćeni aleksitimijom. Što je aleksitimija u pacijenata sa psihosomatskim poremećajem izraženija, teži će biti emocionalni pristup pacijentu.

Brojni su terapijski pristupi psihosomatskim poremećajima. Autori se ovog teksta ograničavaju na psihoanalizu (psihoanalitičku psihoterapiju) i grupnu analizu.

U individualnom se pristupu bavimo povezivanjem emocija s tjelesnim re-

ic stress has a destructive influence on the brain (3).

An infant's relationship with its caregiver is essential for its development. Inadequate early relationships with the caregiver have a triple negative effect: they create increased sensitivity to stressful situations in life, disable the development of an inner calming structure and block the development of the "emotional self" (7-9). Emotions which are initially regulated by others (mother, caregiver) in time, through neurophysiological functioning, become self-regulated via the right prefrontal cortex. If there is no emotional stimulation by the caregiver, the infant's brain will not experience the adequate stimulus to develop structures important for the creation and processing of emotions (65). For this reason, in a state of stress the emotions are perceived as primitive undifferentiated sensorimotor physical sensations, instead of complex emotions with a signal function. This creates an opportunity for the onset of psychosomatic diseases.

Psychosomatic disorders can be accompanied by alexithymia. If alexithymia in patients with psychosomatic disorders is more pronounced, the emotional approach to the patient will be more difficult.

There are numerous therapeutic approaches to psychosomatic disorders. The authors of this paper limit their views to psychoanalysis (psychoanalytic psychotherapy) and group analysis.

In the individual approach, we address the connection between emotions and phys-



akcijama, analizom transfera i kontra-transfera, separacijom i individuacijom.

U grupi se mogu poticati prepoznavanje, označivanje(imenovanje) i verbalizacija osjećaja. U grupi su moguće snažne emocionalne interakcije s drugim članovima grupe, koji često ne kontroliraju svoj kontratransfer, što može pobuditi neka rudimentarna osjećajna stanja pacijenta. Pri svemu tome važna je uloga terapeuta u stvaranju ravnoteže između grupnih i antigrupnih zbivanja (koja mogu dovesti do pacijentova prekida terapije) (57).

Ne možemo zaboraviti ni brojne anatomske i funkcionalne promjene u CNS-u kod aleksitimije, koje, sigurno, ne pridonose terapijskom uspjehu u ovakvih pacijenata i koje potiču skepsu brojnih terapeuta (40,48,59,60).

ical reactions, transference and countertransference analysis, separation and individuation.

In a group setting, recognition, labeling (naming) and verbalization of emotions can be encouraged. Powerful emotional interactions with other group members, who often do not control their countertransference, are possible in a group setting, which can evoke some rudimentary emotional states in patients. The role of the therapist is thereby important in order to create a balance between pro-group and anti-group occurrences (which may lead a patient to discontinue therapy) (57).

We must also not forget the numerous anatomical and functional changes in the CNS in patients with alexithymia, which surely do not contribute to the therapeutic success in these patients, and which encourage skepticism among numerous therapists (40, 48, 59, 60).

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