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IATROGENIES. TYPES AND METHODS OF IATROGENY PREVENTION.

Methodological guide for students for the practical work within the subject: MEDICAL PSYCHOLOGY

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This paper provides detailed information on iatrogenies, types and methods of iatrogeny prevention. The guide also contains learning teaching methods that contribute to the awareness of the iatrogeny phenomenon, to highlighting the causes and their consequences for the patient, as well as enumerating strategies to prevent iatrogenies.

The methodological guide is intended for the students of SUMP "Nicolae Testemitanu" at the Medical Psychology course.

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IATROGENIES. TYPES AND METHODS OF IATROGENY PREVENTION.

The purpose of the theme: ***to inform the students about the effects of the medical errors in general and of iatrogenies in particular.***

Objectives: The information provided to students on this subject will enable them to:

- define the concept of medical error and iatrogeny;
- highlight the differences between iatrogenies and other medical errors;
- list the types of iatrogenies and explain the causes of their occurrence;
- deduce effective strategies to prevent all iatrogenies;
- highlight the differences between iatrogenies and other medical errors.

Topics for verifying student knowledge:

1. Definition of the iatrogenyconcept.
2. General characterization of iatrogenies and of other medical errors.
3. Causes of iatrogeny production.
4. Types of iatrogenies.
5. Prevention of iatrogeny production.

Learning methods used: group work, brainstorming, think-pairs-present, Venn diagram, mosaic/jag-saw/zigzag technique.

THE CONTENTS OF THE LESSON

I. STAGEOF EVOCATION

Activity 1.**"Brainstorming"**technique - based on which the students will define the notion of medical error: medical fault, iatrogeny and malpractice.

Activity 2.**"Venn Diagram"**technique - students are to analyze in small groups (of 3-4 persons each) the types of medical errors: medical fault, iatrogenies and malpractice. They will highlight the defining characteristics for each error, and then indicate the common issues/consequences in making the medical errors.

The term ***iatrogenia*** is derived from Greek language, being composed of the words *iatros* (physician, healer, doctor) and *genesis* (genesis, creation). *Iatrogenias* include diseases, morbid disorders caused by drugs, medical and surgical treatments, unapproved or poorly controlled medical attitudes. In the specialty literature, the term iatrogen is also used in a relatively close sense. Any pathological situation caused, induced, created, generated by a medical act made by the members of the medical staff can be considered as a *iatrogenic situation*. The suffering caused to the patient by such a situation is considered, respectively, iatrogenic. Iatrogenic are also considered the diagnostic ormedical treatment techniques that led to a disease condition, a morbid accident. Therefore, both terms refer to the harmful effects produced to the patient by the means of the medical actions performed for improving his/her state of health. An iatrogenic disease occurs when the collateral effects of a diagnostic or therapeutic procedure result in a pathology independent of the underlying condition. Significantly, the medical act in question seeks to obtain the patient's well-being, but the effect obtained may be negative and equally unexpected, unforeseen, undesirable - this aspect making the difference be-

tween iatrogenic suffering and other aspects of medical practice with negative consequences on the patient (medical malpractice, negligence, etc.). Thus, ***iatrogenia*** represents *"the total of the negative consequences for the patient as a result of the unwanted, unknown or unexpected effects of the medical act".*

Medical fault is a problem of the medical system that generates psychological or somatic negative consequences and is not limited to iatrogenic disease. A general definition considers it *a (un-)deliberate somatic disorder, generated or amplified by medical care (including the absence of the indicated treatment), which leads to additional monitoring, treatment or hospitalization, or even death. This kind of damage is considered to be a fault, whether or not it can be prevented, whether or not it is the result of a mistake or whether it has occurred in a hospital or not.*

The term *medical fault* does not imply intention, negligence, or a certain degree of severity of the disorder, and has been used after a research (Harvard Medical, 1991) concluded that standard medical care generates a significant proportion of patients' suffering. Types of medical fault in the hospital and other clinical contexts are: nosocomial infections, fall injuries, burns (by radiotherapy or medical device), decubitus ulcers, hospital suicide, erroneous diagnosis, unnecessary surgical procedures, insufficient or excessive treatment, etc.

Medical malpractice is the professional error performed by the health service provider through action or inaction, by negligence, imprudence, ignorance, or failure to comply with the regulations regarding confidentiality, consent, and obligation to provide health care services, resulting in patient harm that implies civil liability. Etymologically, **malpractice** is a word made up of the Latin ***mal, malus*** - which means "**bad**" and the Greek word ***praxis - "practice".***

The meaning of the word **malpractice** is that of: ***bad practice, inappropriate practice, practicing the profession in the wrong way***. In

accordance with international doctrine and practice, medical malpractice has some indispensable elements that must be obligatorily taken into account.

The first element is the error. Medical malpractice is always a medical error, a medical mistake, which refers only to the medical act and can only be committed by a doctor or other medical staff. The second element concerns the components of the medical act. Thus, medical malpractice can occur in the scientific plan of the medical act (diagnosis, therapeutic tactics, therapeutic technique and supervision) and in the ethical plan of the medical act (granting medical care, confidentiality and professional secrecy, informing the patient, obtaining informed consent). The third element is fault. Medical malpractice is an illicit act committed with guilt, through action or inaction, or by negligence, imprudence or ignorance. And the fourth element is damage. Medical malpractice is a generator of damages, both patrimonial and non-patrimonial.

Medical malpractice is always produced within the doctor-patient relationship, but its occurence may imply other factors non-depending on the physician, but depending on other medical or pharmaceutical staff, medical-sanitary or pharmaceutical institution, manufacturers and suppliers of medicines and medical devices, utility providers to medical-sanitary and pharmaceutical institutions.

*Activity 3.***"Brainstorming"** technique - based on which the students will enumerate and then elaborate the List - the causes of iatrogeny production.

The attention paid to the phenomenon called iatrogenia, from an ethical and qualitative perspective, is based on the principle of the medical profession: *Primum non nocere - "First, do not harm"*. De-

spite this fact, there is no precise evidence of the errors produced in the medical system so far.

Unfavourable events are incidents that occur unintentionally during the medical treatment: unconsciousness states during anesthesia, death during surgery, therapeutic failures in meningitis, etc., being tragic for both the patients and the medical team. These can lead to complications or litigations. Frequently, investigations focus on the actions of the physician and rarely examine the context in which these events occur. The activity environment includes many components of particular importance, such as the characteristics of the patients, the work team, the economic and organizational context. Investigations that only discuss the doctor's actions or omissions are incomplete and wrong.

Psychological researches show that susceptibility to error is greatly affected by the adverse work and supervision conditions, and inappropriate communication. Human decisions and actions play an important role in most accidents. In the opinion of J. L. Reason (1995), they lead to two types of failures: active and latent.

1) Active failuresare the unsafe actions or omissions committed by anesthetists, surgeons, nurses, etc., which may have immediate adverse consequences. *Active failures* include:

- wrong actions or failure to use the syringe correctly;

- cognitive failures, such as diminishing memory and ommisions by ignorance or misunderstanding of the situation;

- deviations from the safety of the operational practices, procedures or standards.

These errors are caused, in particular, by negligence, inattention, but also due to an inefficient management.

2) Latent failures have their origins in the wrong decisions, often taken by incompetent people. In medicine, latent failures are primarily the responsibility of the management when decisions on the medical

unity have been adopted. The latent failures are made in unfavourable conditions of work and activity. These conditions include:

- loaded workloads;
- insufficient knowledge or experience;
- inadequate supervision;
- a stressful situation;
- incompatible goals (conflict between the financial possibilities and medical needs);
- inadequate communication systems;
- inappropriate maintenance of the equipment and buildings.

The **main errors**, generating iatrogenic diseases, include:

- diagnostic techniques, insufficiently verified;
- inappropriate (improper) medical treatment;
- unsuccessful surgical interventions;
- inadequate hospitalization conditions, prolonged hospitalization;
- incorrect attitude of the doctor;
- inappropriately performed psychotherapeutic interventions, etc.

There also exist causes determined by the ***behaviour of the physician*.** They include:

- ✓ excessive solicitation of laboratory tests;
- ✓ tense relationships between the doctor and the patient during diagnosis and treatment establishment, but also during therapy;
- ✓ the academic, sophisticated expression of some doctors in the transmission of information;
- ✓ partial information;
- ✓ uncontrolled providing of information that can lead to increased responses in some patients predisposed to interpreting and amplifying the fear of illness;
- ✓ the use of incorrectly sterilized instruments;

- ✓ prescribing drugs that have adverse, side effects;
- ✓ excess administration of medications for trivial, exaggerated symptoms, etc.

Another determinant factor of iatrogenicity is the *patient* and *his personality*. Any disease (somatic, psychic, psychosomatic) involves objective disorders and subjective sufferings. The person perceives the transition from the state of health to the disease as an unwanted, unpleasant change, as a danger. People in distress react differently: we encounter attitudes ofdefense, compensation, and refuge. For some people and in certain situations of life, the attitude towards one's own health can be over-emphasized: focusing on one's own body; the subjective interpretation of his condition; the tendency to discover different symptoms that can condition personal suffering.

One of the common causes of iatrogenias is the *low educational level of the patients*. It causes difficulties in understanding, retaining the information received from the medical staff. The study of the personality of the patients with iatrogenic sufferings highlights some specific features explaining their receptivity to iatrogenisation (C. Enăchescu, 2000).

The list of these features distinguishes:

- pronounced egocentrism, with the tendency to constantly analyze one's own body and state of health;

- sensitive-emotional, impressible, labile, easily influencedtemper, with adaptation difficulties;

- suggestiveness (easily believes and accepts the opinion and advices of others about his state of health and illness);

- lack of self-confidence, instability and inner insecurity; emotional immaturity; the tendency to use the "illness" as an argument to be protected from others, to be medically treated, to "take refuge in the disease" more or less consciously.

Another cause of iatrogenicity is the *medical culture* acquired by

the patient through various sources: family education; propaganda on health education issues; personal information from medical materials provided by TV, Internet, etc. It is necessary to specify that medical information is often misunderstood and misinterpreted.

II. STAGE OF MEANING REALIZATION

Activity 4.**"Mosaic/Jig-saw/Zigzag"** technique - the students will form groups of 4 persons each. Each student will choose a number from 1 to 4, after which each number from 1 to 4 will form working teams. Each team will review the subject referred to it according to the logic of the text exposure. After that, each will return to its original group. Students, in turn, will present to the group colleagues the piece of the text studied. Thus, once all the components of the theme/text have been presented, the subjects have a complete/integral view on the subject studied.

Depending on the generating causes, several *types of iatrogenias* can be differentiated.

Drug (pills) iatrogenia. It comprises the totality of the psychosomatic disorders caused by drug administration, referring to adverse reactions or intolerance, eithertheir misuse (as dose, duration, type of drug, drug combination), or various, unpredictable individual responses.

Drug iatrogenia is considered to be the most common type of iatrogenic disease induction due to the increased demand for drug therapy among the population and also due to the fact that there is an increase in the drug supply by the pharmaceutical companies. An important role is played by the advertisements for many drugs presented as "with no major side effects".

Other phenomena with a negative resonance in terms of drug treatment are *self-medication* (often encouraged by the market-based drug

laws that use persuasive advertisements for their non-prescription use) and *polypragmasia* (sometimes used by physicians with a more anxious personality, with the tendency of the therapeutic "covering" of the whole symptomatological spectrum or with insufficient preparation that treats diffusely, without targeting the actual disorder). Erroneous administration of medications with its multiple facets may be the result of different factors: misdiagnosis, inadequate professional preparation, superficiality, etc. Drug iatrogenia also consists in underdosing or overdosing of the medication, unfounded shortening or prolongation of the treatment, undesirable drug combinations (associations).

In medicine, the *adverse effect* is defined as a harmful or unwanted effect of a medication. Regardless of the clinical context, it is the physician's responsibility to use intense therapeutic measures wisely and with the consideration of the action of their hazards and potential costs. The treatment should be rational, assuming from the prescribing physician the weighting of the pros and cons and the belief that the procedure is advisable, appropriate or essential to relieve the condition or cure the condition.

Psychic iatrogenia is largely determined by the adoption of poor communication strategies between the physician and the patient. The entire medical activity takes place on the psychological background made by the communication between the doctor and the patient. Not just the treatment, but also the words, and behaviour ofthe physician can injure the sick person. The harm that a doctor can cause to the patient is not limited to the use without caution of the medication or medical procedures. Equally important are the unreasonable or unjustified comments.

The physician, through both verbal communication and non-verbal messages, is liable (susceptible) to misconduct during the dialogue with the patient. Insufficient information leads to an increase in anxiety, with a decrease in the kinestesic sensitivity threshold and a focus on the sen-

sations and functions of one's own organs. An excessive amount of medical data provided to the patient may also be a source of informational stress (the information given to the patient may overcome his or her processing capabilities), which may also favour anxiety.

The qualitative study of communication highlights the phenomenon of iatrogenia through the inability to decode the medical language. Communication based on an excess of exclusively medical terms emphasizes the patient's confusion about his or her health. The overly familiar approach, sometimes even surpassing the professional aspect, is just as damaging.

Psychic iatrogenia, caused by the poor communication between the physician and patient, may condition anxious depression, somatization on various viscera or systems, etc. The responsible attitude of the physician and of all the medical professionals must be characterized by an excellent quality of the interpersonal communication that generates emotional benefits for the patient.

Iatrogenia of investigation, intervention and exploration. This may be due either to errors in the use of investigation techniques or to excessive medical techniques, which leads to the dehumanisation of the medical act. The advances in technology and medicine, objectified in cutting-edge paraclinical investigations (e.g., magnetic resonance imaging, computed tomography, Doppler ultrasound, etc.), are remarkable and in line with the advances of human civilization. Whenever absolutely necessary, the doctor may and must opt for these means of investigation, but the patient should be informed in advance about the investigations to be carried out, what they consist of and what the risks are. Thus, the unwanted effects will be prevented: anxiety, depressive states, panic attacks, etc.

The doctor's discernment must remain the decisive factor in the choice of each medical act. It is the physician who has to place the investigations between the classical methods, based on clinical experi-

ence, and interpersonal relation (clinical examination, intuition, physician-patient empathic relationship, clinical sense), and modern methods of paraclinical investigation, selecting, of course, the more appropriate and less invasive ones.

Hospital iatrogenia. This is determined by the physically, emotionally or morally incompatible conditions. The stress factors to which the hospitalized patient is subjected to are sufficient for iatrogenisation, namely: isolation and, at the same time, loss of intimacy, cohabitation with other patients, limitation of the contact with the family, impersonal rules of inner order, depersonalized (disease centered) treatment, a multitude of medical procedures and gestures that are incomprehensible, noise, expectation, monotony, etc. For some patients, the complexity of these changes leads to major dysfunctions that outweigh the potential benefits of hospitalization (careful medical supervision of the entire therapeutic process) resulting in iatrogenic sufferings.

The patient oscillates between obedience and hostility, adopting a lot of attitudes caused by specific psychological mechanisms. At the same time, the disease situation causes the regression to infant attitudes and addiction. Long-term hospitalization can contribute to mental disorders such as depression, institutional neurosis, etc.

Iatrogenic diseases can also be conditioned by other mechanisms of production: *imitation*, *suggestion*, *cognition*. *Imitation* occurs through relationships with other patients or as a result of the medical information received from various sources. Concerning the *suggestion*, we can distinguish two possible ways: the patient's autosuggestion following the relationship with the doctor, the investigation techniques, diagnosis, treatment, etc.; suggestive induction, determined by the relationships with the doctor or other patients. *Cognition* can lead to iatrogenia through cognitive distortion (in case of the demanding, academic expression of the medical staff), erroneous interpretation of

the diagnosis or treatment, interpretation of effects in relation to their own state or other patients with the same conditions.

Permanent mental tension, related to the danger of illness, favours anxiety, leads to neurotic development, and eventually to consulting the physician. The patient's meeting with the doctor is one of the most important stages of the medical act in which iatrogenic attitudes can manifest. Iatrogenic disorders have production mechanisms specific to psychosomatic disorders.

III. STAGE OF REFLECTION

Activity 5. **"Think-Pairs-Present"** technique - students will individually meditate on methods, strategies to prevent iatrogenies depending on the type of iatrogeny. The students will be dividedso that after the independent study to be able to form at least 4 groups (for each type of iatrogeny) of 2-3 persons each. The team members (2-3 students) will get acquainted with the ideas of their group colleagues, after which they will discuss them and then present them to all their colleagues.

In the prevention of iatrogenias, the main role is played by the doctor. With regard to the administration of medicines, he is responsible for appreciating with a high degree of professionalism the "balance" that is established between the therapeutic benefit and the side effects and the incisiveness of the medicines. The doctor may and must opt for the most appropriate means of investigation, but the patient should be informed in advance of what the method involves and the possible risks to which he is exposed. The doctor's discernment must remain the decisive factor in the choice of each medical act. It is the physician who has to place the investigations between the classical

methods, based on clinical experience, and interpersonal relation (clinical examination, intuition, physician-patient empathic relationship, clinical sense), and modern methods of paraclinical investigation, selecting, of course, the more appropriate (less invasive) ones.

In order to prevent the effects of iatrogenia in the relationship with the patient, the physician must act with much tact, patience, understanding, psychological support to give the patient the prospect of a suitable therapeutic solution, etc. The attitude of the physician towards his own errors or towards the errors of other colleagues must be self-critical and critical-constructive, with the aim of improvement and self-sufficiency.

Prevention of hospital iatrogenia can be done by humanizing hospitals, equipping of recreational spaces, so that they get closer to the family environment. H. Ey emphasizes the ethical principles that can contribute to diminishing iatrogenias: ***to know, to choose, to treat, to respect***.

SELF-ASSESSMENT TEST
Read each question and tick the correct answers

1. **From what language does the word "iatros" come from?**
   - ☐ a) Latin
   - ☐ b) Hebrew
   - ☐ c) Arabian
   - ☐ d) Greek

2. **What are the types of iatrogenies?**
   - ☐ a) Pharmaceutical
   - ☐ b) Investigation, exploration
   - ☐ c) Hearing
   - ☐ d) Communication
   - ☐ e) Hospital
   - ☐ f) Drug-induced

3. **Which are the main causes of iatrogeny production?**
   - ☐ a) Patient
   - ☐ b) Drugs
   - ☐ c) Surgical instruments, devices
   - ☐ d) Attitude of the medical staff
   - ☐ e) Wrong diagnosis
   - ☐ f) Patient's family

4. **Who is responsible for iatrogeny production?**
   - ☐ a) Clinic/hospital
   - ☐ b) Health care assistant
   - ☐ c) Patient's relatives
   - ☐ d) Physician
   - ☐ e) Nurse
   - ☐ f) Patient

5. **Which iatrogenies are of heterogeneous nature?**
   - ☐ a) Investigation
   - ☐ b) Psychic
   - ☐ c) Hospital
   - ☐ d) Drug-induced

6. **Which iatrogenies are the most widespread/numerous?**
   - ☐ a) Investigation
   - ☐ b) Psychic
   - ☐ c) Hospital
   - ☐ d) Drug-induced

7. **Which iatrogenies have the deepest trauma?**
   - ☐ a) Investigation, exploration
   - ☐ b) Psychic
   - ☐ c) Hospital
   - ☐ d) Drug-induced

8. **What other types of medical errors do you know?**
   - ☐ a) Medical fault
   - ☐ b) Negligence
   - ☐ c) Malpractice
   - ☐ d) Iatrogenies
   - ☐ e) Professional indifference.

9. **What measures do you consider necessary/important for reducing the number of drug-induced iatrogenies?**
   - ☐ a) Limiting "free" access to medicines
   - ☐ b) Encouraging patients to go to the doctor and then administer the pills
   - ☐ c) Cheapening of medicines
   - ☐ d) A poor attitude towards the advertising of medicines
   - ☐ e) The increased price of medicines.

10. **What are the main causes of hospital iatrogenies?**
    - ☐ a) Hygiene
    - ☐ b) Hospital working and activity regime
    - ☐ c) The large number of patients in a hospital ward
    - ☐ d) Large distance from home/patient's home
    - ☐ e) Isolation
    - ☐ f) Alimentation
    - ☐ g) Medical staff
    - ☐ h) Patient’s relatives and family.

11. **In which of the situations listed below the responsible for the production of iatrogenies is the patient?**
    - ☐ a) Lack of physical exercise
    - ☐ b) Failure to follow the doctor's instructions
    - ☐ c) Failure to comply with the diet
    - ☐ d) Self-medication
    - ☐ e) Failure to follow the day's regime.

12. **Which of the following words are synonymous with mintal, psychic iatrogenies?**
    - ☐ a) Behavioural
    - ☐ b) Feeling
    - ☐ c) Communication
    - ☐ d) Relationship
    - ☐ e) Investigation

13. **Which of the following words are synonymous with exploration iatrogenies?**
    - ☐ a) Search
    - ☐ b) Attention
    - ☐ c) Investigation
    - ☐ d) Appreciation

- [ ] e) Knowledge

14. Which of the indicated strategies contribute to the prevention of mental iatrogenies?

- [ ] a) Active listening
- [ ] b) Encouraging
- [ ] c) Lack of time
- [ ] d) Developing communication skills
- [ ] e) Indifference

15. What aspects contribute to/condition the production of mental/communication iatrogenies?

- [ ] a) Lack of information
- [ ] b) Medical language
- [ ] c) Age of the patient
- [ ] d) Excessive information
- [ ] e) Weather outside

16. What does "iatros" mean in Greek?

- [ ] a) Patient
- [ ] b) Physician
- [ ] c) Healer
- [ ] d) Personality
- [ ] e) Complication

17. What are the causes that condition and/or encourage self-medication?

- [ ] a) Cheap medicines
- [ ] b) Loss of confidence in doctors and medicine
- [ ] c) Free access to medicines
- [ ] d) TV commercials

- ☐ e) Recommendations of friends, neighbours, etc.
- ☐ f) The large number of pharmacies

18. What would be the strategies to prevent hospital iatrogenies?

- ☐ a) Hospital humanization
- ☐ b) Respecting hygiene
- ☐ c) The limited number of people in a hospital ward
- ☐ d) To stay in hospital with his or her (the patient's) family
- ☐ e) Going home every night

19. What consequences can long-term hospitalization bring?

- ☐ a) Happiness
- ☐ b) Depression
- ☐ c) Anxiety
- ☐ d) Joy
- ☐ e) Neurosis

20. What other mechanisms can condition the development of iatrogenic diseases?

- ☐ a) Comparison
- ☐ b) Analysis
- ☐ c) Imitation
- ☐ d) Suggestion
- ☐ e) Cognition

BIBLIOGRAPHY:

1. **Athanasiu A.**, Tratat de psihologie medicală, Editura OSCAR PRINT, București, 1998.
2. **Cosman D.**, Psihologie medicală, Editura POLIROM, București, 2010.
3. **Eţco C., Fornea Iu., Davidescu E., Daniliuc N., CărăruşM.** „Psihologie generală”, Suport de curs, Centrul editorial –Poligrafic „Medicina”, Chişinău, 2007, 379 p.
4. **Eţco C., Cernițanu M., Fornea Iu., Daniliuc N., Cărăruș M., Goma L.** Psihologie medicală (suport de curs). Chișinău. Centrul Editorial-Poligrafic Medicina, 2013; 270 p.
5. **Iamandescu I.B.**, Psihologie medicală, ed.II, Editura INFOMedica, București, 1999.
6. **Manea M., Manea T.**, Psihologie medicală, București, 2004.