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Condition, causes and type of imtizaj determine the quality of life: An Appraisal

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Abstract

Tibb-e-Unani claims the approach to wellness and fitness enhancement should be individualistic and personality based. Maintaining health and avoiding disease can be promoted by understanding the constitutional form, learning how to feed, live and medicate properly. Temperament includes characteristics of behaviour such as sociability, emotionality, level of activity, level of attention, and persistence. Similar family temperaments can be attributed to shared genetics and to the environment in which an individual is raised. Experimental learning studies indicate that human personality can depend on the associative conditioning molecular mechanisms that are highly conserved in animals. Temperament is the manifestation of a specific mode of learning and memory which is a dynamic non-linear process associated with complex patterns of inheritance and growth. Temperament and personality play important roles in preserving quality of life.

Keywords: *Tibb-e-Unani; Imtizaj; Mizaj; Humours; Quality of Life; Homeostasis*

1. Introduction

Imtizaj is a condition, which appears during the action and reaction of the properties of different elements or chemical compound at the time of their mixing. ^[1] Rabban Tabri states different conditions of *imtizaj*, which are as follows; (a) *Imtizaj-e-ittehad*: The *imtizaj* which occurs during the during the mixing of such type of matters which are of similar nature as; *Imtizaj* of vinegar with vinegar, *Imtizaj* water with water or *Imtizaj* of oil with oil; (b) *Imtizaj-e-Mumasat*: It occurs when two different matters mix altogether as *imtizaj* of oil with water; (c) *Imtizaj-e-Akhlal*: For example, *imtizaj* of blackish with whitish persons; (d) *Imtizaj-e-Kaifiyat*: in Unani Tib this type of *imtizaj* is applied. *Imtizaj-e-Kaifiyat* occurs in between two different matters, which have different but not opposite qualities as *imtizaj* of *hararat* with *rotoobat* or *imtizaj* of *hararat* with *yaboosat*, similarly *imtizaj* of *baroodat* either with *ratoobat* or with *yaboosat*. ^[2, 3] Here we can see that the *imtizaj* of *hararat* or *baroodat* takes place in such things which can accept both the qualities i.e. *Ratoobat* or *yaboosat*. ^[4] If after *imtizaj* the qualities of any substance remain in balanced way, it results in normal functioning or healthy condition of body, while if there is any misbalance in the qualities, it results in abnormal functioning and this condition is known as disease or *Su-Al-Mizaj*. ^[5]

2. Types of Imtizaj: There are two types of *imtizaj* which are described below: -

2.1. *Imtizaj-e-Sada*: In this type of *imtizaj* two or more elements or chemical compound admix simply, without showing any chemical change in their structure. So the temperaments of mixing substance also remain unchurched, for example, mixture of sugar and water. ^[6, 7]

2.2. *Imtizaj-e-Haqiqi*: When two or more than two elements mix with each other in such a way that each of them shows specific chemical changes due to which their basic qualities convert in to new qualities. ^[8] It means that each mixing elements gives up its own temperament and the newly formed compound adopt new temperament which becomes dominant over the mixing elements. Therefore, by the above description of two kinds of *imtizaj* we can conclude that the temperament formed after *Imtizaj-e-Haqiqi* (real admixture) ant not only by the *imtizaj-e-Sada*. ^[9]

3. Causes of *Imtizaj*: There are two important factors, which are involved the causes of *imtizaj* as: *Ulfat-e-Kimiyawiyah* (chemical affinity), and *Nafrat-e-Kimiyawiyah* (chemical repulsion).^[10]

3.1. *Ulfat-e-Kimiyawiyah* (chemical affinity): The property of a matter to combined with certain other elements or compounds is known as *ulfat-e-kimiyawiyah* (chemical affinity). The elements or compounds which possess this affinity combined together readily and form a new compound.^[1, 2] This chemical affinity depends upon specific type of *Quwat*, which is known as electrovalence of the elements. It is now proved that the elements whose atoms are unstable or which have less than eight electrons in their outer orbit react chemically with other elements to form a new compound.^[11]

3.2. *Nafrat-e-Kimiyawiyah* (chemical repulsion): This quality is just opposite to the *ulfat-e-kimiyawiyah* which means that when certain elements put together they do not show chemical affinity to combined resulting is no compound formation. This property known as *Nafrat-e-kimiyawiyah* (chemical repulsion).^[12] It is seen in such type of elements which causes eight electrons in their outer orbits and these are known as chemically stable elements.^[13] By above described details of *imtizaj* we can conclude that *imtizaj* occur in between elements to form compounds and in between compounds to form *Akhlat* or *Aza Mufridah* and so on.^[14] It is also noted that after *Imtizaj* of two or more substances in new and moderate quality or *Mizaj* is developed which become dominant on all the basic part. Therefore, *Imtizaj* of elements is a progressive procedure which results in ultimate *Mizaj* formation of each individual.^[15] It is defined that all the definition and description of *Imtizaj* and there by *Mizaj* have relevance initially for inanimate and the simplest form of combination. All this changes might have taken place on the planet before the dawn of life; however, these process. Might have continued and paved way for the evolution of life.^[15, 16] Thus simple and real admixing could be prevalent in the simple form of life e.g. virus.

4. *Mizaj-e-Ghayr Muatadil* or *Su-e-Mizaj* (Immoderate Temperament/Inequable Temperament): The maintenance of normal *Mizaj* of the body is the basic cause of health or normal body functioning and any change in it results in unhealthy conditions. So this abnormal *Mizaj*, which can have disturbed the normal functioning, is known as *Mizaj-e-Ghayr Muatadil* or *Su-e-Mizaj*. Any disturbance in the *Kammiyat* (quantity), and *kaifiyat* (quality) of *Rutubat-e-Ustuqussiyah* (internal environment of the cells) or disturbance in the homeostatic conditions of the protoplasm of the cell causes *Su-e-Mizaj* of the cells or tissue locally and any disturbance in the *kammiyat* and *kaifiyat* of *ratubat-Al-Tajawif* or *Ratubat-Al-Urooq* (internal environment of the body) causes *Su-al-mizaj* of the entire body. The effect of local *Su-al-mizaj* on general temperament depends upon the type of cell or the tissue involved. Thus if the cell or tissues belong to an *Uzu-e-Rais* (vital organ) the extent of general *Mizaj* being effected is much more marked.^[1, 16, 17]

5. Classification of *Su-e-Mizaj* (Immoderate or in Equable Temperament):

Ibn Sina describes that in equable temperaments are classified according to race, individual and organs. There are eight variants, all of which agree in being contrary to the eight equable temperaments. Broadly, they are classified in to groups as: -The simple types and the compound types.^[8, 10, 18]

Simple immoderate temperament: - It shows a deviation from the normal equipoise only in respect of one contrary. It is of following types: - When it is an active contrary quality which is in excess, it is of two types: - Immoderate Hot Temperament: - When it is hotter (neither moist nor drier). Immoderate cold Temperament: - when it is simply colder (neither moist nor drier). Where it is a passive contrary quality which is in excess: -Immoderate Dry Temperament: - when it is simply drier (neither hotter nor colder). Immoderate Moist Temperament: - when it is simply moisture (neither hotter nor colder).^[2] These four immoderate temperaments are only temporary, for when too hot, the body becomes drier than it should be; when too cold the body become moist then it should be; by assuming extraneous moisture; when much too moist, coldness supervenes more rapidly than dryness would.¹⁹ If the dryness be not very great, the body remain in that temperature for a considerable time, though ultimately it will become colder than it should be. It will be clear that equipoise and health depend more upon heat than upon cold.^[19]

Compound immoderate temperament: - The four compound temperaments are those in which there is a departure from equability in respect or two contraries. Thus, the temperament may be at the same time hotter and moist than it should be, hotter and drier than it should be.^[1, 3, 9] Obviously, it cannot be simultaneously hotter and colder or drier and moist. Therefore, the four compound immoderate temperaments would be as follows: -

- Immoderate hotter and moist temperament
- Immoderate hotter and drier temperament
- Immoderate colder and drier temperament
- Immoderate colder and moist temperament

Each of these (simple and compound) immoderate temperaments is further sub divisible into two forms (thus making sixteen immoderate temperaments) as: - *Su-e-Mizaj Sada* (formal Type)- Here the temperament is altered only in regard to one quality. E.g. of heat (in fever) or cold (in extraneous cold).^[1, 20] *Su-e-Mizaj Madda* (Materialistic Type)- Here the body is only affected by the quality of the immoderate temperament by virtue of the increased amount of some particular body fluids. For instance, the body is cooled by vitreous serous humour, heated by green choleric humour. Thus from the above account, it is evident that there are sixteen types of immoderate temperaments, which are as follows:

5.1. *Su-E-Mizaj Mufrad* (Single Immoderate Temperament):

There are eight specific types of *Su-Al-Mizaj Mufrad* as: -
 1. Immoderate formal hotter temperament (*Su-E-Mizaj Har Sada*), 2. Immoderate formal colder temperament (*Su-E-Mizaj Barid Sada*), 3. Immoderate formal drier temperament (*Su-E-Mizaj Yabis Sada*), 4. Immoderate formal moister temperament (*Su-E-Mizajratab Sada*). 5. Immoderate materialistic hotter temperament (*Su-E-Mizaj Har-Maddi*), 6. Immoderate materialistic colder temperament (*Su-E-Mozaj Bari-Mada*), 7. Immoderate materialistic drier temperament (*Su-E-Mizaj Yabis-Maddi*, and 8. Immoderate materialistic moist temperament (*Su-E-Mizaj Ratab- Maddi*).^[1, 7, 11, 21]

5.2. Compound Immoderate Temperament (*Su-E-Mizaj Murakkab*):

It also has eight sub types as: - 1. Immoderate formal hotter and drier temperament (*Su-E-Mizaj Har-Yabis Sada*), 2.

Immoderate formal hotter and moist temperament (*Su-E-Mizaj Har-Ratab Sada*), 3. Immoderate formal colder and drier temperament (*Su-E-Mizaj Barid-Yabis Sada*), 4. Immoderate formal colder and moist temperament (*Su-E-Mizaj Barid-Ratab Sada*), 5. Immoderate materialistic hotter and drier temperament (*Su-E-Mizaj Har-Yabis Sada*), 6. Immoderate materialistic hotter and moist temperament (*Su-E-Mizaj Har-Ratab Maddi*), 7. Immoderate materialistic colder and dry temperament (*Su-E-Mizaj Barid Yabis Maddi*), and 8. Immoderate materialistic colder and moist temperament (*Su-E-Mazaj Barid Ratab Maddi*).^[22] But as we know that the ancient Unani physicians have classified all body fluids in four major types, according to four colours, irrespective of their locations are as follows: - *Khilt-e-Ahmar* (Red humour)/*Dam* - All red colour fluids of the body, *Khilt-e-Abyadh* (white humour)/*Balgham* - All white colour fluids, *Khilt-e-Asfar* (Yellow humour)/*Safra* - All yellow colour fluids, *Khilt-e-Aswad* (Black humour)/*Sauda* - All black colour fluids.^[23]

So they generally find out the signs and symptoms of *Su-E-Mizaj* in terms of only these four kinds of humours. It is evident for the following specific types of *Su-E-Mizaj* as follows: - *Su-e-Mizaj Damvi* (sanguine immoderate temperament), *Su-e-Mizaj Balghami* (phlegmatic immoderate temperament), *Su-e-Mizaj Safravi* (choleric immoderate temperament), *Su-e-Mizaj Saudavi* (Melancholic immoderate temperament). It can be inferred from the above discussion that until the humours of the body remain in right proportion, both in quantity and quality, health is maintained, but as soon as they are disturbed in quantity or quality the body becomes diseased.^[22, 23] Ali Ibn Abbas Majusi quoting the views of Hippocrates the profounder of the humoral doctrine writes: - "The human body contains four kinds of humours: *Dam*, *Safra*, *Balgham* and *Sauda*. The constitution of the human body is shaped by the temperaments of these four humours.^[1] Health and disease both are related to them. The humour mixed in a balanced proportion, both in quantity and quality constitute health, and their disproportionate and irregular distribution in quantity and quality causes disease.^[23, 24] Whenever a humour gets isolated from other humours and remains in an unmixed condition, it produces disease in place from where it has been displayed by allowing domination of its opposite humour or by causing spillage, distension and discomfort in the place where it has been transferred to fulfilled the need.^[7, 25]

Following on Hippocrates and Galen, the ancient Unani have also traversed the same path. They described and classified the disease according to their respective humours as:- *Amraz-e-Balghami* (phlegmatic disease), *Amraz-e-Damvi* (sanguine disease), *Amraz-e-Safravi* (yellow bile disease), *Amraz-e-Saudavi* (Black bile disease), But in later stage they have realized that the causes of disease are not only the alteration of quantity or quality of humours but they have mentioned the causes of diseases as immoderation of temperament and *Asbab-E-Sittah Zaruriyah* and its humours when they altered.^[24, 25]

According to Tibb-e-Unani the cause of the health is the maintenance of *Mu'tadil Mizaj* (normal temperament) within the cells, tissues, organs, and the entire body.^[1, 6, 25] Maintenance of *Mu'tadil Mizaj* means the maintenance of static or constant conditions (homeostasis) in the internal environment of the cells or the whole body.^[26, 27] The power, which maintains this *E'tadal-e-Mizaj*, is known as *Tabiat Mudabbir Lil Badan*, which is considered the supreme planner of our body and whose sole function is to maintain

Etadal-ul-Mizaj (homeostasis) in the body.^[24-30]

6. Homeostasis

Homeostasis means a process of maintaining constant normal conditions in the internal environment of the body to enable its optimum normal functioning.^[31] The structure of the various tissues and organs of the body is formed by aggregation of very large number of cells. It is estimate that there are approximately 100 trillion cells in the body.^[32] To maintain the normal functions in the body, all the cells contribute towards the maintenance of homeostasis. Homeostasis is mainly brought about by the extracellular fluid of the body, through which nutrients are supplied to the cells. The nutrients are utilized by cells of the formulation of energy, which is necessary for their active functioning.^[32] Ross and Wilson described the homeostasis as "The composition of the internal environment is maintained within narrow limit, and this fairly constant state is called homeostasis".²⁹ Human homeostasis refers to the body's ability to physiologically regulate its internal environment (milieu interior) to ensure its stability in response to fluctuation.^[30]

In modern medicine, adaptation and homeostasis are considered to fundamentals features of life. Most of the physiological response of body is directed towards preservations of constant physical and chemical internal environment (milieu interior). The internal environment is constituted by the extracellular fluid, which surrounds the tissue cells. The electrolyte concentration, osmotic pressure etc., of the extracellular fluid must remain within the normal range. "Maintenance of a constant internal environment is called homeostasis, while failure of homeostasis mechanism results in disturbed body function known as disease".^[31] The principle of homeostasis was given by Claude Bernard, a great French physiologist who described that our body has an internal environment, which is practically almost constant, is spoken as homeostasis.³² However, despite the challenges tending to alter the internal environment, our body remains alive and healthy, and maintains the homeostasis because our body causes some homeostatic mechanisms, which counteract these challenges and cancel their effects. Thus, when there is a threat of temperature elevation, the body cools itself by dissipating the heat to the environment by vasodilatation of skin as well as evaporating the sweat. If the blood glucose level falls sharply, as an emergency the source the endocrine gland, adrenal medulla secretes and the glucose is mobilizing from the liver and disgorged into the blood and so on.³² The term homeostasis is used by physiologist to mean maintenance of static or constant conditions in the internal environment. Essentially all of the organs and tissues of the body perform functions that help to maintain these constant conditions. For instance, the lungs provide oxygen that is being used by the cells, the kidneys maintain the constant ion concentrations, and the gastrointestinal system provide nutrients.^[33]

7. Control System of the Body

The human body has literally thousands of control systems in it. The most intricate of these are the genetic control systems that operate in all cells to control intracellular functions as well as extra cellular functions. Many other controls system operates within the organs to control functions of the individual parts of the organs; other operates throughout the entire body to control the inter-relations between the organs.³⁴

7.1. Types of Control Systems

Basically there are three types of control system in the body which are performing various physiological functions: -

Negative feedback control system: -Most control system of the body act by negative feedback system. This control system initiates when some factor becomes excessive of deficient. It consists of a series of changes that return the factor towards a certain mean value, thus maintaining the homeostasis. [35]

Positive feedback control system: The positive feedback itself is a part of an overall feedback process. For example: - In case of blood clotting the positive feedback clotting process is a negative feedback process of maintenance of normal blood volume. Also the positive feedback that causes nerve signal allows the nerves to participate in literally thousands of negative feedback nerves control system. [36]

Adaptive control system: - Adaptive control, in a sense is delayed negative feedback. For example: - Some movements of the body occur so rapidly that there is not enough time for nerve signals to travel from the peripheral parts of the body, all the way to the brain and then back to the periphery again in time to control the movements. Then sensory nerve signals from the moving parts, appraise the brain in retrospect whether the appropriate movement has been performed correctly. If not, the brain corrects the signals that it sends to the muscle, the next time when the movement is required. [37] Then once again if still further correction needs to be made this will be done for subsequent movements. This is called adaptive control. [38]

Thus, each cell benefits from homeostasis and in turn each cell contributes its share to word the maintenance of homeostasis. [39] This reciprocal interplay provides continues automaticity of the body until one or more systems that are functional lose their ability to contribute their share of function. When this happens all the cells of the body suffer. Extreme dysfunction leads to death, whereas moderate dysfunction leads to sickness. [40]

8. Factors Affecting Mizaj (Temperament of Homeostasis):

According to Unani system of medicine every individual, having a distinctive temperament, should also causes distinctive characters as well. The sum total of temperamental specificities emerges out as personality and individuality. [24, 25, 28] Since temperament is not static rather it tends to vary from time to time in an individual and is also influenced by various exogenous factors. Because of that, an individual pass through enormous changes throughout his life. The factors affecting Mizaj of human body are classified into the following categories as:- *Khilqi Awamil* (hereditary factors), and *Iktisabi Awamil* (acquired factors). [24, 25]

8.1. Khilqi Awamil: These are the factors which are transmitted from the parents to their offspring, through *Ratoobat-e-Manwiya* (seminal fluid) i.e. chromosomal genes. These factors determine the specific quality and quantity of *ratoobat ghariziyah* (protoplasm) of the fertilized ovum upon which the future development of the child and *Mizaj* of different *Akhlat* depends. Therefore, any alteration in the fertilized ovum, i.e., mutation of genes, alters the *Mizaj* of the offspring. This alteration may be limited localized one, or may affect the whole body. [25] Various kinds of malformations and hereditary diseases are the example of this

factor. [28]

8.2. Iktisabi Awamil: - These factors depend upon the environmental conditions in which the person is living. These are known in Tib as *Asbab Sitta Zururiyah* (six essential factors) some other non-essential factors known as *Asbab Ghayr Zururiyah*. [25] Thus, it is evident that apart from genetic influence the ultimate physiological and anatomical set up of an individual (as temperament of an individual) is influenced by external factors, which are known as *Iktisabi Awamil*. [28]

9. Conclusion

All objects in nature are believed to be composed of four primary elements, i.e. fire, air, water, and earth. When humours prevail in quantity and quality as normal and well mixed as eukrasia condition (in temperament), man remains healthy. However, when the balance becomes upset as a result of disturbances, dyscrasia prevails and individuals get sick. It stated that humors mixed in a balanced proportion, both in quantity and quality, constitute health and their disproportionate and irregular quantity or quality distribution causes disease. This balance is controlled by the body's innate power named *Tabiat*. But the body's state of humor is also affected by external factors such as diet, influence on the environment, etc. Tib recognizes six important factors (also known as lifestyle factors) that influence the personality (humour) composition of the human body. They are: (i) ambient air; (ii) food and drink; (iii) physical activity and rest; (iv) feelings and emotions; (v) sleep and awakesness; (vi) fluid retention and waste evacuation.

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