

## To Compare the Pattern of Depression Symptomatology and Mizaj During the Lockdown and After Lockdown in Young College Students

Iqra Hashmi<sup>1\*</sup>, Yusuf Jamal<sup>2</sup>

### ABSTRACT

**Background:** Mizaj is the only thing which imparts a proper shape and structure to human body and makes capable an individual to perform his functions properly. If the Mizaj of a person is changed, his functions as well as structures tend to change, resulting in disease. Any temperament of a healthy person represents a good profile of biological state which keeps perfect harmony between the milieu interieur (the environment within body) and environment. According to Unani philosophy, the body is made up of the four basic elements i.e., Earth, Air, Water and Fire which have different temperaments i.e., Cold, Hot, Wet and Dry respectively. After mixing and interaction of four elements a new compound having new Mizaj (temperament) comes into existence i.e., Hot Wet, Hot Dry, Cold Wet, Cold Dry.

**Objective(s):** The objective of present study is to assess that which is there any change in pattern of mizaj came up with depression symptomatology during covid 19 lockdown and social distancing restrictions and after removal of lockdown restrictions.

**Materials and methods:** A cross sectional descriptive study to assess the Mizaj and depression with the help of mizaj assessment proforma based on classical literature and Hamilton Depression Rating Scale (HDRS17) in 119(one hundred nineteen) in college students of different gender was carried out A and U Tibbia college and hospital, Karol Bagh, New Delhi, India during period of 2020-2021.

**Results:** In lockdown, Kruskal-Wallis test revealed a statistically difference in mizaj groups across four conditions. Median for depression score were same and lower in damvi and safravi group (Md=8.00) in comparison to balghami(Md=12.00) and highest in saudavi (23.50) group. After lockdown, Kruskal-Wallis test revealed a statistically difference in mizaj groups across four conditions. Median for depression score lower in damvi group (Md=3.00) in comparison to balghami and safravi (Md=4.00) and highest in saudavi (9.00) group.

**Conclusion:** These findings suggests that saudavi group were more depressed and not satisfied after during and after lockdown and damvi were least depressed after lockdown. After that, depression could possibly be considered as one of the diagnostic indices of temperament as there is significant difference between depression symptomatology and different mizaj.

<sup>1</sup>Research Scholar (Physiology), A And U Tibbia College, Karol Bagh, Delhi, India

<sup>2</sup>H.O.D And Professor (Physiology), A And U Tibbia College, Karol Bagh, Delhi, India

\*Corresponding Author

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**Keywords:** *Mizaj, Hamilton Depression Rating Scale, Damvi, Baghami, Safravi, Saudavi.*

The Unani System of Medicine pioneered in Greece and was developed by Arabs into an elaborate medical science based on the frame work of the teaching of Buqrat (Hippocrates) and Jalinoos (Galen). Since that time Unani Medicine has been known as Greco-Arab Medicine.<sup>1</sup> Unani System of Medicine the human body is considered as a single unit, made of seven components known as Umoo-eTabiya. These seven components are Arkan (Elements), Mizaj (Temperament), Akhlaat (Humours), Arwaah (Life force), Aaza (Organs), Quwa (Faculties), Afa'al (Functions). According to Unani philosophy, the body is made up of the four basic elements i.e., Earth, Air, Water and Fire which have different temperaments i.e., Cold, Hot, Wet and Dry respectively. After mixing and interaction of four elements a new compound having new Mizaj (temperament) comes into existence i.e., Hot Wet, Hot Dry, Cold Wet, Cold Dry.<sup>1</sup> Hippocrates propounded the doctrine of humours and temperament which is the principle doctrine of composition and physiology of the body. In Unani medicine, the concept of temperament is the most complicated one. These qualities [hot, cold (active), dry, moist/ Wet (passive)] are the four temperaments. One of the active quality interact with passive quality to denote a particular temperament of the humour. For example, dam (blood): Hot Wet, balgham (phlegm): Cold Wet, safra (yellow bile): Hot Dry, and sauda (black bile): Cold Dry.<sup>2</sup>

Mizaj is the only thing which imparts a proper shape and structure to human body and makes capable an individual to perform his functions properly. If the Mizaj of a person is changed, his functions as well as structures tend to change, resulting in disease. Any temperament of a healthy person represents a good profile of biological state which keeps perfect harmony between the milieu enterieur (the environment within body) and environment. People of one type of temperament may be prone to a particular group of diseases in different phases of their lives and under different climatic conditions, because a body is most susceptible to develop such diseases having same Mizaj as that of it. For example, the persons of Barid Mizaj (cold temperament) are generally susceptible to develop obesity, common cold paralysis, Suddah (obstruction) in the body etc. Similarly, the persons of Har Mizaj (hot temperament) will be prone to such diseases as fever, sunstroke, hypertension etc.<sup>3</sup>

Depression is a common mental disorder, which is characterized by persistent sadness and a loss of interest in activities that normally enjoy, accompanied by an inability to accomplished daily activities, for at least two weeks. In addition, there may be also loss of energy, a change in appetite, sleeping more or less, anxiety, reduced concentration, indecisiveness, restlessness, feelings of worthlessness, guilt, or hopelessness and thoughts of self-harm committing suicide 5. Depression is the foremost cause of ill health and disability worldwide. Depression is different from usual mood fluctuations. According to the latest evaluates from WHO, more than 300 million people are living with depression, with an increase of more than 18% between 2005 and 2015.<sup>4</sup> According to NMHS (2015-16) in India, one in 20 (5.25%) people over 18 years of age have ever suffered (at least once in their lifetime) from depression, which amounts to a total of over 45 million persons with depression in 2015.<sup>5</sup>

Depression is not described in classical unani literature but the clinical features of Malenkholiya saudawi described in Unani literature mimics the clinical features of depression as described in modern medicine. Unani physicians has narrated this disease

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under the heading of Nafsiyati awamil. So, we can say that description of depression in classical literature of Unani medicine is available as Malenkholiya (Melancholia).<sup>6</sup> Although depression is seen in all four varieties of mizaj, but, according to the Unani scholars, among the four temperaments, the people with mizaj-e-saudawi (Melancholic temperament) predisposes an individual to develop the depressive symptomatology most.<sup>7</sup>

If an individual experiences some of the following signs and symptoms most of the day, nearly every day, for at least two weeks, he may be suffering from depression. • Persistent sad, anxious, or “empty” mood • Feelings of hopelessness, or pessimism • Irritability • Feelings of guilt, worthlessness, or helplessness • Loss of interest in hobbies and activities • Decreased energy or fatigue • Moving or talking more slowly • Feeling restless or having trouble sitting still • Difficulty concentrating, remembering, or making decisions • Difficulty sleeping, early-morning awakening, or oversleeping • Appetite and/or weight changes • Thoughts of suicide, or suicide attempts • Body pains, headaches, cramps, or digestive system problems without a clear physical cause and/or that do not relieve even with treatment.<sup>8,9</sup> Present study is conducted to assess that which is there any change in pattern of mizaj came up with depression symptomatology during covid 19 lockdown and social distancing restrictions after removal of lockdown restrictions.

### **METHODS**

#### *Respondents*

The participants were screened according to the following inclusion criteria 1) participants of 18-30 years of age 2). Either gender 3). Clinically healthy individuals and Exclusion criteria Person with 1) age below 18 years 2). Person with age above 30 years 3). Alcoholics 4). Smokers and tobacco users 5). Pregnancy and lactation and 6). Past history of trauma.

### **RESEARCH METHODS**

#### *Questionnaire design*

There are two questionnaires in this study. Questionnaire 1 is for assessment of mizaj (body type) i.e Damvi (Sanguineous), Safravi (Bilious), Balghami (Phlegmatic), Saudavi (Melancholic) which is based on Ajnas e Ashra or ten classical parameters i.e. Malmas (Tactus), Lahm-wa-Shahm (Flesh and fats), Ashaar (Hair rate of growth, colour, distribution), Laun-e-Badan (Body Complexion), Hayyat-e-Aza (Physique), Kaifiat-e-Infaal (Responsiveness of organs), Afal-e-Aza (State of functions), Fuzlaat-e-Badan (body waste), Nom-wa-Yaqza (sleep and wakefulness), Infalat-e-Nafsaniya (Psychic Reactions) described in Unani classical literature and generated by Central Council for Research in Unani Medicine (CCRUM), Ministry of AYUSH, New Delhi. The participants respond the questionnaire according to their characteristics and were calculated for score and whichever of these Mizaj scored highest, patient had that Mizaj dominating and controlling his or her body anatomically, physiologically and psychologically.

Questionnaire 2 is the Hamilton Depression Rating Scale (HDRS<sub>17</sub>). This scale was developed in the late 1960s by Max Hamilton, a psychiatrist at Leeds University. The scale was composed of 17 components to which participants respond on a Likert-type scale of 0–4. Score of 0–7 is generally accepted to be within the normal range (or in clinical remission), while a score of 20 or higher (indicating at least moderate severity) is usually required for entry into a clinical trial.<sup>8,9</sup> The higher the score, the higher the depression symptoms.

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### *Sampling method*

Using simple random sampling in Delhi (India) Hundred (119) college students from Ayurvedic and Unani Tibbia college and Hospital, Karol Bagh were selected as per inclusion and exclusion criteria and asked to complete the questionnaire. The data collection process started on 2<sup>nd</sup> march,2020 and ended on 17 august,2020 for lockdown period and data collection process started on 5<sup>th</sup> December,2021 and ended on 3<sup>rd</sup> feb,2021 after complete unlockdown period. The participants were adequately informed about all relevant aspects the survey, including objective and interview procedures. All participants voluntarily participated in the survey and survey was anonymous.

### *Investigation methods*

The study conducted in the form of one-by-one inquiry by individually giving the questionnaire on email or face to face. To ensure the authenticity and effectiveness of the outcome only one proforma of mizaj and HDRS<sub>17</sub> along with informed consent was given to participants. Participant either responded the questionnaire by giving scanned copy through email or by hard copy face to face. All the questions raised by participants were answered by investigator without interfering with their choices.

### *Statistical methods*

SPSS statistics software 22.0 was used for was used to establish a database for statistical description. The Kruskal-wallis H test followed by post hoc Mann-Whitney U test in SPSS was used to analyze the differences between the groups.  $P < 0.05$  suggested that the difference was statistically significant.

### *Consent of participants*

All the participants gave their consent to participate within the study. All the participants were altogether got an evidence regarding research ethics and signed an consent form after being fully apprised of the aim of the study, the advantage of participation, and withdrawal of participation. Identifiable personal information was deliberately deleted during the transcription process, and were recorded on the questionnaires' transcripts only as ID numbers.

## **RESULTS**

Out of the 119 participants, 44.54% were female and 55.46% were male. Damvi mizaj composed the majority of the 59 participants (49.58%), Balghami mizaj composed of 27 (22.69%), Safravi Mizaj composed of 23 (19.33%), and saudavi composed of 10 (8.40%) participants. Undergraduate students and unmarried students accounted for the largest proportions of the sample.

*Table 1. Mean Rank of depression score in lockdown and after lockdown in different Mizaj group*

Mizaj	Number of participants	Mean Rank for depression Score in lockdown	Mean Rank for depression Score after lockdown
BALGHAMI	27	66.89	70.13
DAMVI	59	51.85	48.17
SAFRAVI	23	56.54	55.02
SAUDAVI	10	97.45	113.90
TOTAL	119		

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**Table 2. Test Statistics<sup>a,b</sup> in lockdown and after lockdown.**

	Score in lockdown	Score after lockdown
Chi-square	17.670	35.215
Df	3	3
Asymp.Sig	0.001	0.000

*Kruskal Wallis Test*

*Grouping Variable: mizaj*

**Table 3. Median of Depression score in lockdown and after lock down for different mizaj.**

Mizaj	Median for depression score in Lockdown	Median for depression Score after lockdown
BALGHAMI	12.00	4.00
DAMVI	8.00	3.00
SAFRAVI	8.00	4.00
SAUDA VI	23.00	9.00
TOTAL	9.00	4.00

**Table 4. Statistical Significance in lockdown and after lockdown**

COMPARISON	SIGNIFICANT AT p <0.05		MANN-WHITNEY U		Z	
	In Lockdown	After Lockdown	In Lockdown	After Lockdown	In Lockdown	After Lockdown
Damwi vs Safrawi	0.717	0.355	643.500	591.000	-0.362	- 0.925
Damwi vs Balghami	0.038	0.003	574.00	480.000	-2.071	-3.006
Damwi vs Saudawi	0.000	0.000	71.000	1.000	-3.828	-5.102
Safrawi vs Balghami	0.407	0.083	268.00	223.00	-0.830	-1.733
Safrawi vs Saudawi	0.005	0.000	43.000	0.500	-2.829	-4.526
Saudawi vs Balghami	0.007	0.000	56.500	4.500	-2.696	-4.503

**Statistical Decision**

In lockdown,

H(degree of freedom)= chi-square test statistic, p value =0.05

H(3)=17.670, p=0.001

After lockdown,

H(degree of freedom)= chi-square test statistic, p value =0.05

H(3)=35.215, p=0.000

In lockdown, Kruskal-Wallis test revealed a statistically difference in mizaj groups across four conditions,chi-square(3,N=119)=17.670,p<0.001 and H0 is rejected. As H0 is rejected, it is concluded that the four Mizaj groups do not have the same depression score and at least two groups had significant difference in depression score. According to table3, Median for depression score were same and lower in damvi and safrawi group (Md=8.00) in comparison to balghami(Md=12.00) and highest in saudawi (23.50) group.

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After lockdown, Kruskal-Wallis test revealed a statistically difference in mizaj groups across four conditions,  $\chi^2(3, N=119)=35.216, p<0.000$  and  $H_0$  is rejected. As  $H_0$  is rejected, it is concluded that the four Mizaj groups do not have the same depression score and at least two groups had significant difference in depression score. According to table 3, Median for depression score lower in damvi group (Md=3.00) in comparison to balghami and safravi (Md=4.00) and highest in saudavi (9.00) group.

Mann whitney U (Post hoc test) was applied in lockdown and after lockdown data to determine which two groups have significant difference and test results are given Table 4: As shown in the table there is mean rank difference (M1 M2) in damvi vs. Saudavi which is highest, Safravi vs. saudavi, balghami vs saudavi and balghami vs damvi at  $p<0.05$  with 95% confidence. These findings suggests that the groups with significant difference were same in both lockdown and after lockdown period.

### DISCUSSION

Depression entity is described in classical unani literature as Malenkholiya saudavi as it mimics the clinical features of depression described in modern medicine. Unani physicians has narrated this disease under the heading of Nafsiyati awamil.<sup>11</sup> however, depression is seen in all four varieties of mizaj, but, according to the Unani scholars, among the four temperaments, the people with mizaj-e-saudavi (Melancholic temperament) predisposes an individual to develop the depressive symptomatology most.<sup>5</sup>

Ancient Unani concept is like modern concept that physical and social activity releases endorphins that can help to boost mood is also linked to higher self-esteem, better sleep, less stress, and more energy.<sup>5,7</sup> Results of this study are in line with this concept that depression score decreased when the restrictions removed and people were able to go out and able to do their physical activities and follow their daily routine.

According to Ibn Sina in 'Canon of Medicine' more innate heat and more hotness results in more energy for physical activity and physical activity plays an important role in mental satisfaction and happiness.<sup>12</sup> According to our results damvi group showed the most improvement in depression score after removal of lockdown restrictions.

According to one study, individuals with cold Mizaj were significantly less happy than people with warm Mizaj.<sup>13</sup> Our results are in line with this study cold mizaj balghami and saudavi are significantly less happy than hot mizaj damvi and safravi in lockdown and after lockdown saudavi is least happy and damvi were most happy.

### CONCLUSION

Feeling sad, depressed during home quarantine in covid lockdown were common in all four categories of mizaj. But saudavi group were more depressed and not satisfied after during and after lockdown and damvi were least depressed after lockdown. After that, depression could possibly be considered as one of the diagnostic indices of temperament as there is significant difference between depression symptomatology and different mizaj. This study has limitations as this data is lacking to have volunteers of male participants or female participants in different mizaj and sample size is small. So, this data can't be generalized over the whole population due to the small sample size. Further study needs to be conducted with a large sample size to get a better understanding of the correlation of depression symptomatology and mizaj.

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***Conflict of Interest***

The author(s) declared no conflict of interest.

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