

## **The Effect of a Varied Program of Therapeutic Exercises and Pulmonary Ventilation on some Vital Processes after Infection with the Corona virus COVID19**

**\*Dr/ Walid Muhammad Al-Demerdash Abdel-Rahim**

### **Introduction and research problem:**

The beginning of the Corona virus (COVID-19) or Corona virus 2 associated with severe acute respiratory syndrome called in English (SARS-COV-2) was discovered in December 2019 in Wuhan, central China, and it was called (COV-2019) and has been classified by the Health Organization Global on March 11, 2020 as a pandemic. It is an acute respiratory disease whose incubation period ranges from 5 to 14 days or more and there is tentative evidence that it may be contagious before symptoms that include fever, cough and shortness of breath appear (16) (21)

Fischer Sanche (2020) reported that the first spread of the virus outside China was in Vietnam and Germany on January 22, and as an initial reaction of the State of China, the Wuhan government and 15 cities in the vicinity of Hubei imposed a movement ban that included more than 57 million people, and this led to the suspension of all transportation General, long-distance trains, aviation and buses. Chinese scientists have been able to isolate and determine the genetic sequence of the virus, and have shared this with international bodies and organizations, so that the international medical community can independently

develop PCR tests to detect the disease. He announced that the genome sequence of (COVID-19) matches between 75 and 80% of the SARS sequence. (5) (22) (28)

As Copinath 2020 points out: The Corona virus has caused global social and economic damage, including the largest global economic recession since the Great Depression. In addition to postponing or canceling sporting, religious, political and cultural events. Schools and universities were closed at the global level in 190 countries, and a state of panic and panic prevailed in the world. (25) (30)

Richard also points out: Ali, the Corona virus, COVID 19, is an infectious respiratory disease that causes pulmonary damage. It is a tissue anomaly that forms a scar that results from infections in the lung tissue and includes a group of symptoms (shortness of breath - chronic cough - chest tightness - loss Weight and loss of appetite - atrophy and dysfunction of the peripheral muscles - depression - anxiety). (20)

While World Meters2020 indicates that patients who have recovered from the COVID19 infection require their participation in sports programs that seek pulmonary rehabilitation in order to avoid lung

---

\* Assistant Professor, Department of Sports Health Sciences - Faculty of Physical Education - Al-Azhar University.

risks, and that physical exercise is an important part of recovery after infection with the Corona virus. (24) (27) (31)

From the previous standpoint, the problem of this research has crystallized in being one of the scientific attempts through which a program of therapeutic exercises directed at pulmonary ventilation of the lungs is developed and the effect of this program on vital processes after infection with the Corona virus COVID19, where oxygen rate O<sub>2</sub>, breathing level, pulse rate and blood pressure With the aim of expediting the healing process and avoiding negative risks to the respiratory system and lungs after infection with the Corona virus. Which may contribute to the restoration of functional efficiency of vital processes with the ability of the injured to practice life matters efficiently and competently and to the same degree that it was before the occurrence of the injury

#### **Research aims:**

Designing a diverse program of therapeutic exercises and pulmonary ventilation to increase the efficiency of the respiratory system and lungs to overcome the negative effects of infection with the Corona virus COVID19, with the aim of studying the effect of the proposed program on some vital processes by measuring the following variables:

- 1- The level of oxygen O<sub>2</sub> in the blood.
- 2- The level of breathing.
- 3- Pulse rate.
- 4- The rate of blood pressure.

#### **Research hypotheses:**

**In light of the objectives of the research and its procedures, the researcher assumes the following:**

- 1- There are statistical differences between the pre-, post- and post-measurements in the O<sub>2</sub> rate in favor of the dimensional measurements of the research sample.
- 2- There are statistical differences between the pre, consecutive and post measurements in the respiratory level in favor of the dimensional measurements of the research sample.
- 3- There are statistical differences between the pre, consecutive and post measurements in the pulse rate in favor of the dimensional measurements in the research sample.
- 4- There are statistical differences between the pre, consecutive and post measurements in the rate of blood pressure in favor of the dimensional measurements in the research sample.

#### **Terms used in the search:**

##### **Pulmonary Rehabilitation:**

A multidimensional care for patients with respiratory disorders, including (patient education- drug therapy- physical training- breathing exercises- psychosocial support).(18): 15) Corona virus COVID19

It is an acute respiratory disease caused by the COVID19 infection that is transmitted primarily through respiratory droplets (sneezing - coughing). The average incubation period for the virus is 5 days. It was first discovered in Wuhan, China, in December 2019, and is currently spreading around the world. (25) (29)

#### **Search procedures:**

##### **Research Methodology:**

The researcher used the experimental method using the method

of pre-measurement, tracer measurement, and post-measurement on one experimental group, due to its suitability to the nature of the research objectives.

**Community and Sample Research:**

The research sample was chosen by the intentional method from those infected with the Corona virus COVID19 after they were discharged from the hospital, and they met the following conditions:

-The injury was determined through a medical diagnosis based on a chest CT scan - PCR.

The patient must be completely free of chronic diseases.

The target age group is from 40 to 50 years old.

The study was conducted on (5) injured men.

**Table (1)**

**The arithmetic mean, standard deviation, and torsion of age, height, and weight**

Variable	Measure unit	SMA	standard deviation	Statistical coefficient
Age	Year	44.800	3.492	0.310
Height	Cm	171.200	7.791	0.476
Weight	Kg	76.800	3.768	1.397

The previous table shows the arithmetic mean and standard deviation for each of (age - length - weight), and the torsion coefficient for each of them has been limited between (3, -3). This indicates the homogeneity of the sample in the variables of age, height and weight.

**Second: chronic diseases**

The researcher selected the research sample from those infected with Corona virus who do not suffer from chronic diseases.

Third: homogeneity in the pre-measurement of the research variables

**Table (2)**

**The arithmetic mean, standard deviation and skewness of search variables**

Variable	SMA	standard deviation	Statistical coefficient
The rate of oxygen is O <sub>2</sub>	93.600	1.673	1.089
Pulse rate	80.200	1.483	0.552
Average blood pressure	131.00	2.236	2.236
	89.00	1.209	1.714
Breathing level	52.200	0.541	0.541

The previous table shows the arithmetic mean and standard deviation of the pre-measurement for all the research variables, and the skew coefficient for each of them was limited to between (3, -3). This indicates the homogeneity of the

sample in the pre-measurement of the research variables.

**The human field of research:**

The human field of research included (5) infected men who were exposed to the Corona virus COVID19

after they were discharged from the hospital.

**Time domain for research:**

An exploratory experiment was conducted on (1) infected with Corona virus from 5/8/2020 to 6/8/2020, and the basic experiment was applied from 8/8/2020 to 5/10/2020.

Geographical area:

Pre, tracer and dimensional measurements were performed at Mansoura International Hospitals in Dakahlia Governorate. While the treatment program was implemented at the Sports Medicine Unit at Mansoura Sports Stadium.

**Methods of data collection:**

The data were obtained through theoretical reference sources, research and studies related to the research topic - the global network of information - expert opinion survey form on the axes of the treatment program and the proposed pulmonary ventilation and its suitability for the nature of the injury.

**Devices and tools used:**

Spirometry device- Mercury pressure meter- Rastameter device to measure total body height- Medical scale- Antiseptics- Medical gloves- A group of different weights- Stop watch- Crushed ice bags- Medical balls.

**Search variables:**

In order for accurate results to be reached in this study, the researcher set the independent variable (the therapeutic exercise program and the proposed independent variable pulmonary ventilation), which may affect the dependent variables represented in oxygen rate O<sub>2</sub> - respiratory level - pulse rate - blood

pressure rate. And those affected by infection with the Corona virus

**Suggested Therapeutic Exercise and Pulmonary Ventilation Program:**

The program, in its implementation stages, is based on observing the therapeutic scientific foundations directed at pulmonary ventilation while adhering to all health requirements, spacing and all safety measures that accompany each stage and are divided into:

1- Through One (therapeutic exercises directed at pulmonary ventilation)

It will continue for a period of (4) weeks, with (3) weekly units, with a total number of (12) training units. The unit time ranges from (30- 40) minutes, and this stage aims to:

- 1- Overcoming shortness of breath.
- 2- Improving pulmonary ventilation and respiratory capacity.
- 3- Strengthening the breathing muscles (the muscles between the ribs - the diaphragm muscle - the expansion of the rib cage) to improve the movement of inhalation and pulmonary exhalation.

**2- The second stage (functional training)**

And it lasts for (4) weeks with (3) units per week and a total number of units (12) training units, and the unit time ranged from (40-60) minutes and this stage aims to:

- 1- Raise the functional efficiency of the lungs.
- 2- Improving cardio respiratory fitness.
- 3-Increasing physical fitness and performance rates.

A group of symptoms have been described, and if the patient feels them,

he must immediately stop exercising, according to the directives of the World Health Organization and the British Lung Foundation. (35)

- 1- Severe shortness of breath.
- 2- Tightness in the chest.
- 3- Dizziness or light-headedness.
- 4- Nausea.
- 5- Excessive sweating.
- 6- Increased muscle pain.

#### **Presentation and discussion of research results:**

**First:** Presenting and discussing the results of the first hypothesis, which

states that there are statistical differences between the pre, consecutive and post measurements in the O<sub>2</sub> rate in favor of the dimensional measurements of the research sample.

To verify this hypothesis, the Friedman Test, which is the analogous non-parametric test, was used to test the analysis of variance for repeated measurements due to the small size of the sample, and the following table shows that.

**Table (3)**

**(Ca<sub>2</sub>) value to find differences between pre, tracer and post measurements in O<sub>2</sub> rate using Friedman's test (n = 5)**

Variable	Measure	Average of ranks	Value (Ca <sub>2</sub> )	Indication level
The rate of oxygen O <sub>2</sub>	Pre	1	9.579	0.05
	Traceral	2.10		
	Post	2.90		

It is evident from the previous table that the value of (Ca<sub>2</sub>) to know the differences between the pre, tracer and dimensional measurements of the O<sub>2</sub> rate using Friedman's equation amounted to (9.579), which is a statistically significant value at the level of 0.05; This indicates that there are statistically significant differences between the different measurements in the rate of oxygen O<sub>2</sub>, and these

differences are attributed to the benefit of the telemetry. Where the average ranks of the post-measurement were higher than the pre and tracer measurements, which confirms the effectiveness of the proposed program in raising the O<sub>2</sub> rate of the research sample, and the following table shows the arithmetic averages of the three measures and the rate of improvement.

**Table (4)**

**Arithmetic means, standard deviations, and percentage improvement in O<sub>2</sub>**

Measure	SMA	standard deviation	Value of $\eta$
Pre	93.60	1.673	0.936
Traceral	95.80	1.303	
Post	97.40	1.140	

It is evident from the previous table that the arithmetic mean of O<sub>2</sub> is

higher in the telemetry than the pre and tracer measures; Where the average

post-measurement was (97.40), while the arithmetic mean of the pre-measurement was (93.60) and the tracer measurement was (95.80), and the value of (2) to know the size of the effect was (0.936), indicating that the size of the effect is large, and the following figure shows the arithmetic averages of the three measures.

The researcher attributes those differences between the pre, tracer, and post measurements and the rate of improvement in the O<sub>2</sub> rate to the therapeutic exercise program and pulmonary ventilation that was applied to the research sample and what was included in the first phase of directed respiratory training and its positive effect on the efficiency of the circulatory and respiratory systems and increasing oxygen levels in the blood. This is consistent with what MASON (2000) indicated that pulmonary ventilation exercises lead to a number of adaptations that improve physical performance, followed by growth processes for both the heart and muscle cells, and these processes depend on the formation of new blood vessels and the repair and replacement of cells that have been destroyed. (18: 34-35)

Where JONES (2011) points out that when cells are deprived of oxygen, they increase the production of (VEGF - A) to induce the growth of new blood vessels from previously existing blood vessels by binding to cell surface receptors (VEGFR1 - VEGFR2) present

in the inner cells of the circulatory system (Heart- blood vessels) and these receptors work through different pathways to contribute to cell proliferation, growth, and migration. (17: 122-128)

Mufti Hammad (2010 AD) also points out that tribal and respiratory fitness also requires the fitness of the cardiovascular and respiratory muscles, as well as blood and skeletal muscle fitness. And that aerobic exercise is the best way to develop and improve physiological systems, and this improvement is necessary to bring about an improvement in the maximum oxygen consumption. (13: 188)

The results of that study are consistent with the results of the study of Muhammad Al-Saeed Jouda 2019 AD and its findings on the positive effects of aerobic exercise on cardiac fitness and the rate of oxygen consumption. (7)

Thus, the first hypothesis of the research is achieved, which states that there are statistical differences between the pre, consecutive and post measurements in the oxygen rate of the research sample.

**Second:** Presenting and discussing the results of the second hypothesis of the research, which states that there are statistical differences between the pre, consecutive and post measurements in respiratory level in favor of the dimensional measurements of the research sample.

**Table (5)**  
**The (Ca2) value to find the differences between the pre, tracer and post measurements of respiratory level, using Friedman's test (n = 5)**

Variable	Measure	Average of ranks	Value (Ca2)	Indication level
Breathing level	Pre	3.00	10.00	0.05
	Traceral	2.00		
	Post	1.00		

It is evident from the previous table that the value of (Ca2) to know the differences between the pre-, follow-up and dimensional measurements of the level of respiration using Friedman's equation reached (10.00), which is a statistically significant value at the level of 0.05. This indicates that there are statistically significant differences between the different measurements in the level of respiration, and these

differences are attributed to the benefit of the post-measurement. Where the average ranks of the post-measurement were less than the pre-measurement and the tracer measurements, which confirms the effectiveness of the proposed program in reducing the respiratory level of the research sample, and the following table shows the arithmetic averages of the three measures.

**Table (6)**  
**Arithmetic means and standard deviations in respiration level**

Measure	Average of ranks	Value (Ca2)	Indication level
Pre	25.200	1.303	0.916
Traceral	23.200	1.340	
Post	20.400	1.516	

It is evident from the previous table that the arithmetic mean of the respiratory level in the telemetry is lower than the pre- and the follow-up measures. Where the average post-measurement was (20.400), while the arithmetic mean of the pre-measurement was (25,200) and the tracer (23,200), and the value of (2) to know the size of the effect was (0.916), indicating that the size of the effect is large, and the following figure shows the arithmetic averages of the measurements. The three are for breathing level.

The researcher attributes the decrease in the difference rate of the dimensional measurements from the pre-and tracer measurements of the level of respiration to what the treatment program aimed at for lung ventilation and improving the state of breathing and overcoming the negative effects that the lung was exposed to, whether from (damage to the alveoli - or infections in the lung tissue), after exposure to the virus Coronary disease COVID19, where a CT scan of the lung shows the presence of double pneumonia that takes the edge of the

peripheral lung of the Ground Glass Opacity.

This is consistent with what was mentioned by Muhammad Subhi Abdel Hamid (1998AD) that pulmonary ventilation exercises increase the amount of air used and thus improve the oxygen required for the oxidation process and the release of energy. Pulmonary ventilation also helps to get rid of carbon dioxide resulting from muscular work. The vital capacity also increases as a result of the strength of the breathing muscles. (9: 173)

Bahaa Al-Din Salama (2000 AD) also agrees and asserted that directed exercises increase the respiratory rate when performing physical work, the lung size and capacity change, and the vital capacity increases. (3: 82)

It also agrees with what Ahmed Nasreddin Sayed (2014) stated that physical performance causes a set of physiological changes related to lung

function, maximum pulmonary ventilation, and respiratory rate. (2: 107)

The results of that study are consistent with the results of the study of Mona Saeed Muhammad (2020 CE) and its findings regarding the positive effects of diet and physical training on physiological processes after exposure to the COVID19 virus. (14)

Thus, the second hypothesis of the research is fulfilled, which states that there are statistical differences between the pre, consecutive and post measurements in the respiratory level in favor of the dimensional measurements of the research sample.

Third: Presenting and discussing the results of the third hypothesis of the research, which states that there are statistical differences between the pre, consecutive and post measurements in the pulse rate in favor of the dimensional measurements of the research sample.

**Table (7)**

**The value (Ca2) to find the differences between the pre, tracer and post measurements in the pulse rate, using Friedman's test (n = 5)**

Variable	Measure	Average of ranks	Value (Ca2)	Indication level
Pulse rate	Pre	3.00	7.600	0.05
	Traceral	2.00		
	Post	1.00		

It is evident from the previous table that the value of (Ca2) to know the differences between the pre, follow-up, and dimensional measurements of the pulse rate, using Friedman's equation, amounted to (7.600), which is a statistically significant value at the level of 0.05; This indicates that there are

statistically significant differences between the different measurements in the pulse rate, and these differences are due in favor of the post measurement. Where the average ranks of the post-measurement were less than the pre and tracer measurements, which confirms the effectiveness of the proposed program in reducing the



pulse rate of the research sample, and the following table shows the

arithmetic averages of the three measurements of pulse rate.

**Table (8)**

**The arithmetic means and standard deviations of the pulse rate**

Measure	SMA	standard deviation	Value of $\eta$
Pre	80.200	1.483	0.867
Traceral	74.200	1.095	
Post	74.00	1.581	

It is evident from the previous table that the arithmetic mean of the pulse rate is lower in the telemetry than the pre and tracer standards. Where the average post-measurement was (74), while the arithmetic mean of the pre-measurement was (80,200) and the tracer (74,200), and the value of (2) to know the effect size was (0.867), indicating that the size of the effect is large, and the following figure shows the arithmetic averages of the measurements The three are for pulse rate.

The researcher attributes the decrease in the pulse rate of the postal measurements from the pre and tracer measurements to what the proposed treatment program sought during its implementation phases, as studies and clinical tests confirm the presence of changes in the pulse level as a negative response to infection with the Corona virus COVID19 and the physiological changes it causes, whether in heart rate or volume. Cardiac impulse.

Where the researcher believes that the pulse rate is an indicator of the functional state of the internal body systems, whether the normal pulse rate during rest or after exertion.

This is consistent with what Baha Salameh (2000 CE) indicated,

that the pulse rate reflects the amount of work that must be done to meet the increasing requirements of the body during physical exertion, as the processes of contraction and relaxation of the heart muscle continue. (73: 3)

Ahmed Nasreddin Sayed (2014) indicates that the performance of physical exertion causes a set of different physiological changes, as the pulse rate increases during the physical exertion, in order for the heartbeat to continue to accelerate with the increase in the intensity of the exerted load until the rate reaches its maximum at the level of maximum severity, and in this case it may reach Pulse to about 200 beats per flour. (2: 107)

Bahaa Al-Din Salama (2009) also indicates that there are many functional changes that occur to the heart as a result of sports, such as a decrease in the pulse speed during rest and a change in blood pressure in athletes than others. (4: 115)

The results of that study are consistent with the results of the study of Muhammad Al-Saeed Judah (2019) and its findings regarding the positive effect of aerobic exercise on the level of pulse and rates of cardiac propulsion.

Thus, the third hypothesis of the research is fulfilled, which states that there are statistical differences between the pre, consecutive and post measurements in the pulse rate in favor of the dimensional measurements of the research sample.

Fourth: Presenting and discussing the results of the fourth hypothesis of the research, which states that there are statistical differences between the pre, consecutive and post measurements in the rate of blood pressure in favor of the dimensional measurements of the research sample.

**Table (9)**

**The (Ca2) value to find the differences between the pre, tracer and post measurements of blood pressure, using Friedman's test (n = 5)**

Variable	Measure	Average of ranks	Value (Ca2)	Indication level
blood pressure	Pre	2.80	8.588	0.05
	Traceral	2.10		
	Post	1.10		

It is evident from the previous table that the value of (Ca2) to know the differences between the pre, tracer and post measurements of blood pressure using Friedman's equation amounted to (8.588), which is a statistically significant value at the level of 0.05 This indicates that there are statistically significant differences between the different measurements in blood pressure, and these differences

are attributed to the benefit of the post-measurement. Where the average ranks of the post-measurement were less than the pre and tracer measurements, which confirms the effectiveness of the proposed program in reducing the blood pressure of the research sample, and the following table shows the arithmetic averages of the three measures.

**Table (10)**

**Arithmetic means and standard deviations in blood pressure**

Measure	SMA	standard deviation	Value of $\eta$
Pre	131	89	0.922
Traceral	127	82	
Post	121.400	80.400	

It is evident from the previous table that the arithmetic mean of the pressure in the telemetry is lower than the pre and the tracer standard. Where the average of the post measurement was (12400 / 80.400), while the arithmetic average of the pre-measurement was (131/89) and the

tracer (127/82)), and the value of (2) to know the size of the effect was (0.922), which indicates that the size of the effect is large, The following figure shows the arithmetic averages of the three measures of blood pressure.

The researcher attributes the change in the blood pressure level to

the decrease in the dimensional measurements from the pre-and tracer measurements to what the therapeutic exercise program has sought to improve the state of pulmonary ventilation and the volume of cardiac propulsion and to overcome the negative effects that occur after exposure to the Corona virus COVID19, as laboratory tests and blood tests confirm that the corona virus COVID19 occurs. Changes in the blood as it reduces white blood cells that appear in the Lympho Cytes and the analysis of CRP - C-reactive protein, which forms a rise in the level of blood pressure, so white blood cells are the main component of the formation of immunity and fighting diseases, as well as the main component of skeletal muscles and the heart.

Muhammad Ali Al-Qat (2002) indicates that regular exercise leads to an increase in the number of red blood cells and the percentage of hemoglobin, for which the maximum oxygen consumption improves. (11:43)

Also, Muhammad Hassan Allawi - Abu Al-Ela Ahmad Abdel Fattah (2000 AD) indicate that the average blood pressure values of healthy people range between (80-90 mm Hg) at rest. And that the blood pressure in the capillaries reflects the level of average blood pressure, which is the output of blood during the cardiac cycle, and therefore it is defined as the amount of pressure that ensures the flow of blood in the small arteries without the fluctuation of blood during systole and diastole. (8: 248-249)

Mason (2000) also indicates that the human body, with physiological changes, takes some measures to meet the challenges facing it, such as stimulating receptors for immune hormones and some stress hormones such as (catecholamine) to release blood stem cells and direct them to blood vessels in the bone marrow. (37:18)

The results of that study are consistent with what was indicated by Qasim Hassan Hussein (1990AD) that the value of blood pressure decreases during training from the normal limit, and the heart responds to this decrease as a result of increased contraction, so the heartbeat speeds up than the normal limit that it was at rest time, where blood pressure changes significantly Under the influence of sports training. (6: 109)

The results of that study also agree with what the World Health Organization indicated in 2020 of the utmost importance for those infected with the Corona virus COVID19, after discharge from the hospital, to undergo training programs directed at pulmonary ventilation because of its positive effects on respiration level, oxygen rate and blood pressure rates. (36)

### References

- 1- Ahmed El-Gendy- Amr Medhat 2013:** Fundamentals of Medical Physiology, Mansoura University College of Medicine, Al-Abbas Press.
- 2- Ahmed Nasreddin Sayed 2014:** Principles of Sports Physiology, Arab Thought House, Cairo.
- 3- Bahaa El-Din Ibrahim Salama 2000:** Sports Physiology and Physical

Performance (Blood Lactate) Arab Thought House, Cairo.

**4- Bahaa El-Din Ibrahim Salama 2009:** Physiology of Exercise, Arab Thought House, Cairo.

**5- BBC, (25 January 2020):** Corona virus: The Chinese president warns of an accelerating spread of the virus. <http://www.bbc.com/arabic/world51248664>.

**6- Qasim Hassan Hussein 1990:** The Science of Sports Training, Dar Al-Fikr, Amman.

**7- Mohamed Al-Saeed Joudeh 2019:** The effect of a modern Bo-Tae aerobic exercise program on cardiorespiratory fitness and body composition. Faculty of Physical Education in Qena - South Valley University.

**8- Muhammad Hassan Allawi - Abu Al-Ela Ahmed Abdel-Fattah 2000:** Physiology of Sports Training, 2nd Edition, Dar Al-Fikr Al-Arabi, Cairo.

**9- Muhammad Subhi Abdel-Hamid 1998:** Sports Physiology (Changes- Tests- Evaluation- Evolution), Bansiya Publishing House.

**10- Muhammad Abdel Hakim Muhammad 2020:** The possibility of applying the precautionary measures for the return of sports activity in the villages in light of confronting the emerging corona virus covid19, Faculty of Physical Education, Port Said University.

**11- Muhammad Ali Al-Qat 2002:** Sports Physiology and Swimming Training, Part 1, Arab Center for Publishing, Cairo.

**12- Muhammad Qadri Bakri, 2000** Sports Injuries and Modern Rehabilitation, The Book Center for Publishing, Cairo.

**13- Mufti Ibrahim Hammad 2010:** Physical Fitness for Health and Sports, Dar Al-Kitab Al-Hadith, Cairo.

**14- Mona Saeed Mohammed Al-Qatari 2020:** Evaluation of the nutritional and health behavior of Arab people recovering from Covid 19 and home healers, Faculty of Specific Education, Minia University.