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Analyzing Psychological Health and Physical Vitals of Metastasis Cancer Patients Diagnosed during COVID Pandemic in Iraq

Thaibia Abdul Razzaiq¹, Firas Aziz Rahi², Hajer Ali Enad³, Muqdad Hussein Ali⁴, Ahmed S. Abed⁵, Hussein Ali Hussein⁶, Zahraa Amir Abd Zaid^{7*}

Abstract

Background: The COVID-19 epidemic was undoubtedly the worst public health emergency of the 20th century. In addition to the rise in unnecessary fatalities and the strain on healthcare systems, COVID-19 poses a significant threat to the mental health of the entire community. Cancer is one of the largest and most urgent concerns we face today. There are physical, psychological, and behavioral components to this condition. The impacts of COVID-19 on mental health are likely to affect certain communities disproportionately.

Aim: This study intends to examine the psychological health and physical vitals of Iraqi cancer patients with metastasis during the COVID pandemic.

Methodology: For this goal, a randomized controlled study (RCT) was conducted to determine the effect of news coverage of COVID-19 on metastatic cancer patients' psychological and physical vitals before and after exposure. During the covid-19 phase, 92 individuals with metastatic cancer were selected from hospitals in Iraq for participation in this experiment. Later, these volunteers were divided into two groups: the experimental group, which contained 46 patients, and the control group (which included 46 patients).

Results: According to the findings, physical vitals for both groups revealed a minor difference. Nonetheless, after the test, the experimental group's anxiety level increased, whereas the control group's anxiety level remained practically unchanged.

Conclusion: These findings indicate that the COVID epidemic severely affects the psychological health and physical vitality of individuals with metastatic cancer.

Introduction

The devastating COVID-19, which spread for the first time in December 2019, is rapidly spreading domestically and globally.^[1] In just one month, the World Health Organization (WHO) declared the virus-caused sickness a public health emergency and warned that by March 2020, it would become a pandemic. The worldwide increase in COVID-19-related mortality and morbidity has aroused considerable safety concerns.^[2]

The incidence of deaths attributable to

COVID-19 infections among high-risk groups, such as the elderly and those with concurrent disorders such as cancer, diabetes, respiratory difficulties, or cardiovascular diseases (CVDs), is steadily increasing.^[2-4] In addition, the immunosuppressed circumstances of some patients, particularly those with a history of cancer, enhance their likelihood of getting the infection and associated complications, leading to a delay in treatment, longer hospital admissions, and a poorer prognosis. Cancer is the third biggest cause of death in Iraq, following cardiovascular and cerebrovascular disorders.^[5] From January 3, 2020, to December 21, 2021, Iraq's

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¹Medical technical college/Al-Farahidi University, Baghdad, Iraq,

²Department of Medical Laboratories Technology, AL-Nisour University College/ Baghdad/Iraq,

³Medical Laboratory Techniques Department/AL-Mustaqbal University College, Hillah, Babil, Iraq,

⁴College of Media, department of journalism/The Islamic University in Najaf, Najaf, Iraq,

⁵Hilla University college, Babylon, Department of Prosthetic Dental Technology/Iraq,

⁶Scientific Research Center, Al-Ayen University, Thi-Qar, Iraq,

⁷Mazaya University College/Iraq, E-mail: zahraa.amir@mpu.edu.iq

Address for correspondence:

Zahraa Amir Abd Zaid, Mazaya University College/Iraq

E-mail: zahraa.amir@mpu.edu.iq

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coronavirus dynamic visual dashboard documented 24,074 disease-related deaths and 2,090,844 total cases of COVID-19.^[4]

The COVID-19 ambiguity emotionally and mentally impacted individuals regarding their sentiments and cognition. People were anxious about virus acquisition, the longevity of the epidemic, and impending viral attacks. Cancer patients may be particularly susceptible to the psychological and emotional effects of the coronavirus. According to the CDC, they may respond more robustly to the pressure of this calamity.^[6, 7]

Before the COVID-19 pandemic, cancer patients and survivors faced several obstacles. In conventional settings, cancer patients are already susceptible to psychological impacts associated with their sickness due to the intensity and brutality of the disease.^[8] Their treatment and diagnosis are important stresses that can lead to psychological problems such as anxiety and depression, as well as serious medical problems such as sleeplessness and lack of appetite.^[7, 9] They frequently worry about the future, how their therapy will influence their daily lives, the side effects of their medication, any new body discomfort they may encounter, and the likelihood that their tumor will return or worsen.^[10] One of the most common negative impacts of a cancer diagnosis is cancer-related depression accompanied by acutely distressing feelings that reduce treatment efficacy. Cancer patients are more susceptible to mental health and psychological disorders than the general population.^[11]

Due to the strain on their already compromised immune systems, the increased danger of virus exposure, and the risk of infectious respiratory disease, they now experience increased anxiety. In addition to their underlying psychological burden, they encounter major challenges in the COVID-19 environment, primarily because cancer accounts for a substantial proportion (20%) of COVID-19 mortality rates.^[11-13] In addition, additional studies have indicated the potential effects of COVID-19-related anxiety on decision-making processes, such as postponing chemotherapy and surgery.^[14-16]

Cancer patients are particularly susceptible to the COVID-19 pandemic due to the immunosuppression brought on by their disease and treatment. In addition, it has been noted that the primary risk factors for mental health issues in cancer patients were a higher level of fatigue and pain and a greater tendency to worry about cancer management as a result of COVID-19, as well as a greater tendency to feel intense psychological pressure as a result of COVID-19 and a greater tendency to worry about managing their condition.^[14]

This study aimed to assess the Psychological Health and Vital Signs of Metastasis Cancer Patients Diagnosed in Iraq during the COVID Pandemic. The study's aims are as follows:

1. To determine the impact of the COVID-19 outbreak on the psychological health of Metastasis Cancer Patients Diagnosed during the time of pandemic in Iraq
2. To explore the effect of the COVID-19 outbreak on the physical vitals of Metastasis Cancer Patients Diagnosed in Iraq

As a result of the aims mentioned above, we projected that cancer patients would be susceptible to psychological difficulties, such as depression, anxiety, and stress, in addition to unfavorable medical effects from the COVID-19 pandemic. The study aimed to identify the incidence of stress, anxiety, and depression among cancer patients. Examining the links between stress, anxiety, depression, sociodemographic factors, cancer-specific attributes, patients' experiences during medical visits, risk perception toward COVID-19, and health concerns during the outbreak in Iraq were among the additional objectives.

2. Literature Review

Psychological Well-Being of Metastatic Cancer Patients

The discovery of a potentially deadly illness significantly impacts an individual's life. In addition to the physical pain patients feel after surgery, radiotherapy, heavy drugs, and chemotherapy, they frequently experience substantial emotional pain that affects not only them but also their families, careers, spouses, and friends. Receiving a cancer diagnosis can be exceedingly distressing; for some, the disease may progress more slowly than others. Patients who recognize their illness is worsening endure emotional outbursts and existential angst. In addition to the numerous physical changes that patients often experience, they may also have a sense of loss, have changed jobs, have difficulty achieving their goals, and be aware of the suffering of their loved ones, all of which contribute to their suffering. This impacts their quality of life. In addition, patients cannot take multiple types of antidepressants during their cancer treatment due to medical restrictions.^[17-19] Multiple interventions and therapies are used to improve the psychological wellness of cancer patients. Cognitive-behavioral therapy can be used to analyze and address the ideas, emotions, and behaviors that can increase or perpetuate indicators of depression or anxiety, such as medication aversion, avoidance tendencies, and frequent reassurance seeking. It can help cancer patients manage mental concerns and enhance their psychological health.^[17] Such patients require daily care, attention, compassion, support, and reassurance. Because they cannot rely on medication to treat psychological issues, they demand alternative treatments. Studies have indicated that social capital considerably impacts cancer patients' resilience and psychological well-being.^[20] Patients' mental health is influenced by the perception that they are in good

hands^[21] due to the effect of more competent and supportive healthcare staff. Art interventions have also been demonstrated to promote cancer patients' mental health.^[22]

Vital Signs of Cancer Patients

Checking vital signs is an essential component of standard medical care that aids physicians in diagnosing patients with cancer discomfort, assessing their physical condition, and prescribing the appropriate drugs. The healthcare system lays significant emphasis on heart rate, respiration rate, and daily home monitoring for cancer patients.^[23] Vital signs such as heart rate, blood pressure, respiration rate, oxygen saturation, temperature, and bodily variations provide valuable information regarding the patient's general status. Even near-death patients are routinely examined for vital signs, and their data is kept while hospitalized. Frequently, abrupt and dramatic changes in vital signs suggest circulatory instability and/or breathing restriction, which may be associated with potentially deadly outcomes.^[24] Patients with advanced cancer can forecast their survival duration with frequent monitoring of vital signs and normal laboratory results.^[25] As a result of their diagnosis and condition, cancer patients face psychological symptoms such as extreme anxiety. Higher levels of anxiety can have adverse impacts on their health. They can cause problems, and their vital functions, such as heart rate, can also be impaired. In addition, they may lack confidence when confronting the sickness, which might hinder their rehabilitation. Several strategies are implemented to return anxiety and, as a result, vital signs to normal range. In conjunction with jaw relaxation and other gentle exercises, music therapy helps reduce anxiety in cancer patients. Effective in this regard include varieties of music such as easy listening, soothing, tranquil, and music types indicated by researchers and preferred by patients. In addition, therapists are consulted on this topic. Research indicates that music might enhance the comfort and relaxation of patients. It can also improve their disposition and pleasant emotions. It has also been discovered that music positively affects psychological symptoms, reduces anxiety and pain, and normalizes increased vital signs such as heart rate and blood pressure.^[26] Anxiety levels and increased vital signs can also be reduced by the use of funny movies, so providing cancer patients with distraction and relief.^[27]

The Psychological and Physical Well-Being of Cancer Patients during the Covid-19 Pandemic

The COVID pandemic has negatively impacted numerous people's physical and mental health. It has affected individuals with and without psychiatric problems. Multiple problems already plague cancer patients, but the COVID-19 pandemic has worsened matters. Due to the pandemic, research indicates that cancer patients sense a lack of independence, autonomy, and social life. Due to their lack of social life, individuals lack support and must contend with loneliness. During the epidemic, stress and situational insecurity rose. Overall, the high

psychological and emotional stresses caused by the COVID-19 epidemic jeopardize the patients' mental health. These demands include the effects of limited access to secure cancer treatment, loneliness, social isolation, a heightened sense of insecurity, fear of infestation, and significant changes to daily routines, all of which can create stress, sadness, and anxiety in cancer patients. Due to a lack of expert medical care, cancer sufferers' physical health is negatively harmed. The patients were responsible for managing their health through home-based care. In addition, they reported a lack of respite and psychological support from professional healthcare personnel. Some individuals also receive psychotherapy from healthcare facilities that have been limited.^[28, 29] They cannot see their doctors and receive treatment for any new physical concerns. Providing assistance and interacting with cancer patients via the internet was aided by online interventions.^[30]

Materials and Methods

For this investigation, a randomized controlled trial (RCT) was done to investigate the effect of viewing covid-19-related news on pre- and post-psychological states and physical vitals of patients with metastatic cancer. During the covid-19 era, 92 metastatic cancer patients from various Iraqi hospitals were recruited for this study. Subsequently, these participants were separated into control (46 patients) and experimental (46 patients) groups. During collecting data for this study, crucial precautions were taken to ensure the safety of covid-19 participants. No one was compelled to participate in this research. This data was collected from March 2020 to June 2020. The chosen individuals were at least 18 years old.

A total of 110 people were initially recruited for this investigation. 16 patients were removed due to linguistic and cultural difficulties, while 2 were removed for other reasons. Therefore, a random sampling technique was utilized to choose the sample for this study, giving each participant an equal chance of being selected.

Instruments

The instruments used for this study include:

- **Patient Registration Form**

This form had separate columns for the patient's age, anxiety management, diagnosis, surgical experience, and gender.

Registered nurses measured the patients' physical vitals. These parameters include respiration, heart rate, oxygen saturation, and diastolic and systolic blood pressure.

- **State-Trait Anxiety Inventory (STAI)**

Spielberger created the STAI to measure the level of state-trait anxiety. It is a brief questionnaire containing self-evaluation questions. In a study by Quek *et al.*^[31], the value of Cronbach alphas for the original English scale was determined to be 0.86. This number ranged

from 0.37 to 0.88. In this investigation, its value was between 0.82 and 0.86. This scale consists of 20 items that properly measure the emotions of individuals in a given situation. The present study graded these scales as “Not at all (1), Somewhat (2), Moderately so (3), and Very much so (4)”.[32]

Data Collection

Patients were asked to fill out a registration form in the first phase, and a nurse measured their pre-test vitals. The patients in the experimental groups were afterward shown a 10-minute video on the effects of covid-19 on social and economic conditions. In contrast, there was no intervention advocated inside the control group. After 20 minutes of viewing the film to the experimental group, their vital signs and anxiety levels were evaluated using the STAI in the experimental and control groups.

Data Analysis

In this study, statistical analysis was performed. Statistical Package for the Social Sciences (SPSS) 17.0 was utilized for this aim. The demographics of the selected patients were determined using percentages, arithmetic means, and numbers. In contrast, the differences between the control and experimental groups were evaluated using the Chi-square test.

A t-test was used to compare the control and experimental groups’ vital signs and anxiety scores. Before and after the presentation of covid-19 news, these parameters were analyzed with this test. Significant level (p 0.05) and confidence interval (95%).

Ethical Considerations

To guarantee an effective and secure environment for participants and researchers, this study took into account a variety of ethical principles. First and foremost, physical

contact was discouraged, experienced nurses analyzed the patients’ vital signs, and researchers adhered to the covid-19 guideline of no physical contact. Faces were concealed with masks, and no extraneous individuals were entertained throughout the investigation. Each responder was instructed on the purpose of the study, and their written agreement was obtained. In this regard, the hospital ethics committee’s consent was also sought.

Results

Demographics, Physical Vitals, and Anxiety Score of Experimental and Control Groups

The demographic characteristics, anxiety scores, and physical vitals of both control and experimental groups are presented in table 1. It has been observed that the total number of participants for the present study was 92 (46 were included in the experimental group, while 46 were included in the control group). In the experimental group, 54% of male and 45% of female participants were included, whereas in the control group, 52% of male and 47% of female participants were included. According to the diagnosis of patients in the experimental group, 21% of patients had metastatic breast cancer. In comparison, 26%, 17.3%, 13%, and 10.8% suffered from Metastatic gastric cancer, Metastatic pancreatic cancer, Metastatic colon cancer, and Metastatic rectum cancer. In contrast, 28.2% of patients in the control group had Metastatic gastric cancer. In the experimental group, 50% of patients had surgery experience, while 56% had surgery experience in the control group. The mean age and anxiety for both experimental and control groups were 61.05±13.33 and 63.37±13.86, and 49.83±8.15 and 47.12±6.64. The vital signs for both experimental and control groups were SBP (132.24±18.9 and 128.62±16.06), DBP (83.62±14.03 and 80.87±9.94), pulse (74.11±12.36 and 74.78±12.03), respiration (21.67±3.03 and 21.14±3.03) and oxygen saturation (93.85±2.01 and 83.78±2.33).

Table 1: Demographics, Physical Vitals, and Anxiety Score of Experimental and Control Groups before Test

Characteristics	Exp. Group		Con. Group		Test	Sig. (p)
	N=46, n	%	N=46, n	%		
Gender					x ² =0.041	0.82
Male	25	54.34	24	52.17		
Female	21	45.65	22	47.82		
Patients Diagnosis					x ² =3.74	0.72
Metastatic breast cancer	10	21.7	11	24.4		
Metastatic gastric cancer	12	26.0	13	28.2		
Metastatic pancreatic cancer	8	17.3	9	19.5		
Metastatic colon cancer	6	13	6	13		
Metastatic rectum cancer	5	10.8	4	8		
Others	5	10.8	3	6.5		
Surgery experience	23	50	26	56.5	x ² =2.92	0.062
Age	61.05±13.33		63.37±13.86		t=-0.78	0.41
Anx.	49.83±8.15		47.12±6.64		t=1.72	0.07
SBP	132.24±18.95		128.62±16.06		t=0.95	0.32
DBP	83.62±14.03		80.87±9.94		t=1.04	0.28
Pul.	74.11±12.36		74.78±12.03		t=-0.24	0.81
Resp.	21.67±3.03		21.14±3.03		t=0.81	0.41
SPO ₂	93.85±2.01		83.78±2.33		t=0.15	0.87

Exp.=experimental; Con=control; Anx=anxiety; DBP=diastolic blood pressure; SBP=systolic blood pressure; Pul=pulse; Resp.=respiration; SPO₂=oxygen saturation

After test Results

After showing the covid-19 related video to the experimental group, their anxiety level and physical vitals were again measured. Table 2 shows the anxiety level for experimental and control groups after the test were recorded to be 50.83±8.15 and 47.14±5.64. In contrast, the vital signs for experimental and control groups after the test were recorded to be SBP (133.24±18.95 and 127.48±14.37), DBP (85.62±15.03 and 78.87±9.34), pulse (76.11±13.36 and 75.37±11.08), respiration (21.15±1.83 and 21.24±2.65) and oxygen saturation (94.85±2.11 and 93.88±2.48).

Table 2: Physical Vitals and Anxiety Score of Experimental and Control Groups after Test

Characteristics	Exp. Group	Con. Group	Test (t)	Sig. (p)
Anx.	50.83±8.15	47.14±5.64	-1.22	0.31
SBP	133.24±18.95	127.48±14.37	0.22	0.82
DBP	85.62±15.03	78.87±9.34	0.34	0.71
Pul.	76.11±13.36	75.37±11.08	-1.26	0.21
Resp.	21.15±1.83	21.24±2.65	-0.26	0.77
SPO ₂	94.85±2.11	93.88±2.48	0.92	0.35

Exp.=experimental; Con=control; Anx=anxiety; DBP=diastolic blood pressure; SBP=systolic blood pressure; Pul=pulse; Resp.=respiration; SPO₂=oxygen saturation

Comparison between Before and After Test

Results

Table 3 compares the control and experimental groups' anxiety levels and physical vitals measured before and after the test. As observed, there was little variation between the physical vitals of both groups. However, the experimental group's anxiety level increased following the test, whereas the control group's anxiety level remained virtually unchanged. Similarly, the blood pressure of patients in the experimental group rose following the test, whereas the blood pressure of patients in the control group nearly remained the same.

Table 3: Comparison between before and after test results

Characteristics	Before Test	After Test	Test (t)	Sig. (p)
Exp. Group				
Anx.	49.83±8.15	50.83±8.15	-1.63	0.23
SBP	132.24±18.95	133.24±18.95	-1.55	0.12
DBP	83.62±14.03	85.62±15.03	-1.59	0.13
Pul.	74.11±12.36	76.11±13.36	-1.63	0.11
Resp.	21.67±3.03	21.15±1.83	-1.48	0.13
SPO ₂	93.85±2.01	94.85±2.11	1.72	0.08
Con group				
Anx.	47.12±6.64	47.14±5.64	0.02	0.97
SBP	128.62±16.06	127.48±14.37	-1.12	0.25
DBP	80.87±9.94	78.87±9.34	-1.75	0.07
Pul.	74.78±12.03	75.37±11.08	0.75	0.43
Resp.	21.14±3.03	21.24±2.65	0.52	0.62
SPO ₂	83.78±2.33	93.88±2.48	0.32	0.74

Exp.=experimental; Con=control; Anx=anxiety; DBP=diastolic blood pressure; SBP=systolic blood pressure; Pul=pulse; Resp.=respiration; SPO₂=oxygen saturation

Discussion

In the present study, a randomized controlled trial (RCT) was conducted to determine the impact of news coverage of COVID-19 on the psychological processes and basic vital signs of metastatic illness patients before and after

the event. 92 people with metastatic cancer from several Iraqi hospitals were selected for this experiment during the covid-19 phase. The volunteers were divided into two groups: a control group (46 patients) and an experimental group (46 patients). Regarding COVID-19, extensive safety precautions were taken when collecting data for this experiment. To guarantee that everyone had an equal chance of being selected, random sampling was used to choose the samples for the current study. After randomly assigning participants to watch or not see a film, the STAI was used to evaluate their anxiety levels. The experimental and placebo groups' pre- and post-test vital signs and anxiety levels were compared. Neither group's vital signs differed significantly, according to observations. Following the test, the experimental group's anxiety level increased, while the control group's anxiety level remained practically unchanged. Similarly, the blood pressure of participants in the experimental group increased following the test, whereas the blood pressure of patients in the control group scarcely changed.

In their study, Nguyen *et al.*^[33] found that older cancer patients typically experienced melancholy, anxiety, and difficulty coping with their disease. Up to 25% of patients who receive a cancer diagnosis may experience melancholy. In contrast to younger cancer patients or older people without cancer, senior cancer patients frequently describe feelings of isolation and a decline in cognitive function. In addition, limited access to food and the fear of becoming ill in public (because of COVID) may impact their diet and weaken their immune system. Social distance, which has been standard practice to reduce the likelihood of transmission to healthy family members, may exacerbate psychosocial issues. Using contactless communication channels such as social media, mobile phones, face time, the internet, texting, and teleconferences, they must stay in touch with their family and friends. This study's findings support those of the present study.

In their study, Graves *et al.*^[34] noted that the coronavirus (COVID-19) pandemic has prompted rapid transformations in modern culture and the medical system. These changes could significantly affect cancer patients and survivors, including decreased access to healthcare, increased infection risk, and financial challenges. Researchers attempted to comprehend how the epidemic affected the quality of life of thyroid cancer patients. A survey comprising a variety of questions was done online. During the COVID-19 outbreak, thyroid cancer patients reported heightened worry, panic, and a decline in social interaction. The results of the present investigation support the notion that COVID has a considerable impact on cancer patients' psychological health and physical vitality.

In their study, Parizad *et al.*^[35] intended to determine how guided visualization affected the anxiety, muscle soreness, and vital signs of COVID-19 patients. They assert that the high death rate of COVID-19 can induce

worry. Those infected with COVID-19 may have muscle pain. Anxiety is a psychological stress that affects the immune system by eliciting various physiological and hormonal reactions.^[36] Constant anxiety increases the body's oxygen consumption and work rate. As a result, when we are anxious, our bodies respond by causing us to breathe more deeply. Effective pain and stress treatment accelerate a patient's recovery, whereas the inability to address anxiety causes problems with the heart, lungs, digestive system, endocrine system, and immune system.^[37]

Alshahrani *et al.*^[38] conducted a cross-sectional study to determine how COVID-19 affected children with cancer in all aspects of life, including the healthcare care provided, the specific safety measures implemented to prevent the spread of the virus in cancer patients, the mental and psychological consequences, and its impact on the quality of life. Research evaluating the effect of the COVID-19 epidemic on the care given to adolescents with cancer at a tertiary institution received 204 responses. The majority of patients were receiving continual treatment. During the COVID-19 pandemic, children faced numerous obstacles, including emotional issues. The pandemic harmed the quality of life of a substantial proportion of patients, primarily due to restrictions on socializing, social exclusion, and feelings of anxiety, dread, and isolation. The most frightening finding of the poll was the effect of the epidemic on children's psychological health. During the outbreak, parents of children reported an array of concerning behavioral changes in their children. During the outbreak, more frequent telemedicine consults with the attending physician were used to aid children and their families suffering from increased anxiety. When necessary, referrals were made to psychiatrists and psychologists. The findings of the present investigation support the claim that COVID greatly influences cancer patients' psychological health and physical vitals.

In contrast, Mou *et al.*^[39] studied the effect of passive music therapy on the anxiety and vital signs of lung cancer patients during the initial peripherally implanted central catheterization in China. Patients in the test group experienced a significant reduction in distress, diastolic blood pressure, and electrocardiogram over time compared to those in the control group, according to repeated measurements and analysis of variance. However, there was no change in systolic blood pressure or respirations.

Conclusion

In a randomized, controlled trial, the effects of news coverage of COVID-19 on pre- and post-psychological states and physical vitals of patients with metastatic disease were evaluated (RCT). During the Covid-19 era, 92 metastatic cancer patients from several Iraqi hospitals were selected for this trial. These participants were divided into the experimental group, 46 patients, and the control group. During the current investigation's data

collection, extensive safety precautions were taken within the context of covid-19. Using a random sampling method, every participant had an equal chance of being chosen. Before and after the exam, the control and experimental groups' anxiety levels and physiological well-being were comparable. According to the data, physical and vital indicators were comparable between the two groups. The experimental group's anxiety level increased after the test, whereas the control group's anxiety level remained relatively unchanged. Similarly, the blood pressure of patients in the experimental group rose after the test, in contrast to those in the control group, whose blood pressure remained unchanged.

Implications

This study is one of the first to examine the effect of viewing covid-19-related news on pre- and post-psychological states and physical vitals of patients with metastatic cancer. Hospital administrations can utilize these discoveries to assist people living with cancer to overcome their psychological behaviors and stabilize their physical vitals. This study's findings will aid in creating evidence-based methods and should motivate additional research toward dependable medicinal uses with minimum adverse health effects.

Limitations

Variations among respondents and psychiatric disorders that may influence how individuals experience anxiety and discomfort are limitations of this study. The second limitation was the influence of the study setting on the intervention, as the high contagiousness of COVID-19 can make the researcher unpleasant. To circumvent this limitation, the medical staff was hand-selected and provided with personal protection equipment to adhere to SOPs.

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