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THE IMPACT OF PSYCHOSOMATIC INTERVENTIONS ON CARDIOVASCULAR REHABILITATION IN POST-COVID-19 PATIENTS

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Abstract

Background and Rationale. Recent studies indicate a 30–60% increase in cardiovascular risk following COVID-19. This is driven by two main mechanisms:

Physical Injury: Direct viral damage, microvascular inflammation, and autonomic nervous system (ANS) instability.Psychosomatic Factors: Anxiety and depression (observed in 35–40% of patients) act as initiators for ischemic events and panic attacks, which patients often mistake for heart attacks. The Biological-Spiritual Dependency (The Stress Axis) Psychosomatic factors aggravate heart disease through the chronic release of stress hormones (Adrenaline and Cortisol).

This leads to: Increased cardiac workload and vascular tension. Chronic inflammation, which deepens psychological depression, creates a vicious cycle.

Introduction

Research Design

Method: Prospective-observational study.

Period: 2024–2025.Setting: Outpatient rehabilitation phase.

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Sample Size: 120 patients exhibiting cardiovascular symptoms post-COVID-1. Study GroupsThe participants are divided into two distinct cohorts to measure the efficacy of integrated care:

Group 1 (n=60):

Control Group.Intervention: Standard cardiological rehabilitation (Medication, ECG monitoring, Echocardiography, and lifestyle advice).

Group 2 (n=60): Experimental Group. Intervention: Standard rehabilitation PLUS psychotherapeutic intervention (Psychoeducation and Cognitive Behavioral Therapy (CBT) elements).5. Expected Outcomes. The study aims to demonstrate that Group 2 will show:

1. Lower levels of cardiac anxiety and fewer "pseudo-heart attack" panic episodes.
2. Improved autonomic stability (better blood pressure and heart rate control).
3. Higher Quality of Life (QoL) scores compared to those receiving only physical treatment.

Comprehensive Recovery Recommendations. To ensure holistic healing, the study advocates for a three-pillar approach:

1. **Cardiological Supervision:** Regular EKG and Ultrasound to rule out organic changes.

Psychological Support**:** Use of psychotherapy or antidepressants to break the fear-stress cycle.Lifestyle Modification: Focus on "Marriage style" (consistent habits): quality sleep, anti-inflammatory nutrition, and gradual physical activity.

Young range: 30–65 years old**, Gender composition:** 68% female, 32% male. Inclusion criteria. By PCR-confirmed COVID-19 history. From illness, 1–6 months later, during preserved remaining heartbeat vein symptoms (tachycardia, arrhythmia, chest pain, arterial pressure lability).Psychoemotional violations symptoms (anxiety , panic episodes , sleep deterioration).Exclusion criteria. Previously, organic heart disadvantages existed. Heavy psychic diseasesDecompensated somatic situationResearch methods

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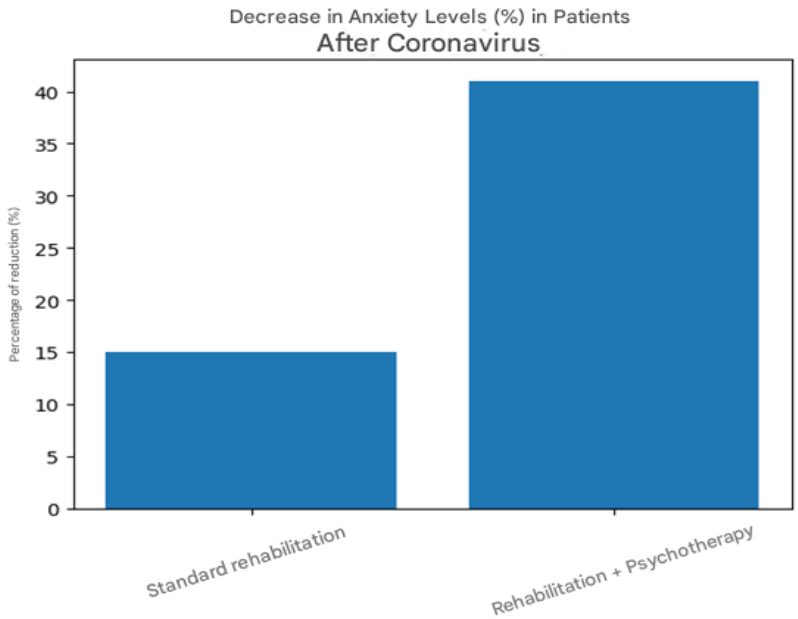
1. Clinical and cardiological assessment

- ECG
- Holter monitoring
- Echocardiography
- Arterial pressure monitoring

2. Psychological assessment

- Concern level assessment scale
- Depression scale
- Psychosomatic symptom index
- To stress endurance tests



3. Statistician analysis

Data from the SPSS program through analysis was analyzed.

- Average value (M±m)
- t- criterion

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- Correlation analysis (Pearson coefficient)
- $p < 0.05$ is significant because the reception was done.**From the coronavirus next effectiveness of psychotherapy in patients (n =120)**

Index	Group 1: Standard rehabilitation (n=60)	Group 2: Rehabilitation + psychotherapy (n=60)	p - value
Tachycardia episodes decrease (%)	18 %	34 %	<0.05
Concern index decrease (%)	15 %	41 %	<0.01
Sleep quality improvement (%)	12 %	37 %	<0.05
Heart hit frequency stabilization (%)	20 %	39 %	<0.05

Scientific note: In group 2 (psychotherapy added), all indicators, according to the statistician, show reliable positive dynamics observed. This psychosomatic approach is complex in rehabilitation the importance is confirmed.

Independent selections Student t- test for Group 1 (standard) based on rehabilitation, and Group 2 (rehabilitation + psychotherapy) differences evaluated. (n1 = 60, n2 = 60).

Indicator	Group 1 (M, %)	Group 2 (M, %)	t value	p- value
Tachycardia decrease (%)	18	34	-10.95	<0.001
Anxiety decrease (%)	15	41	-17.80	<0.001
Sleep quality improvement (%)	12	37	-17.12	<0.001
Heart hit stabilization (%)	20	39	-13.01	<0.001

Note: All indicators $p < 0.001$, i.e., groups between difference statistic in terms of high at the level found to be reliable.

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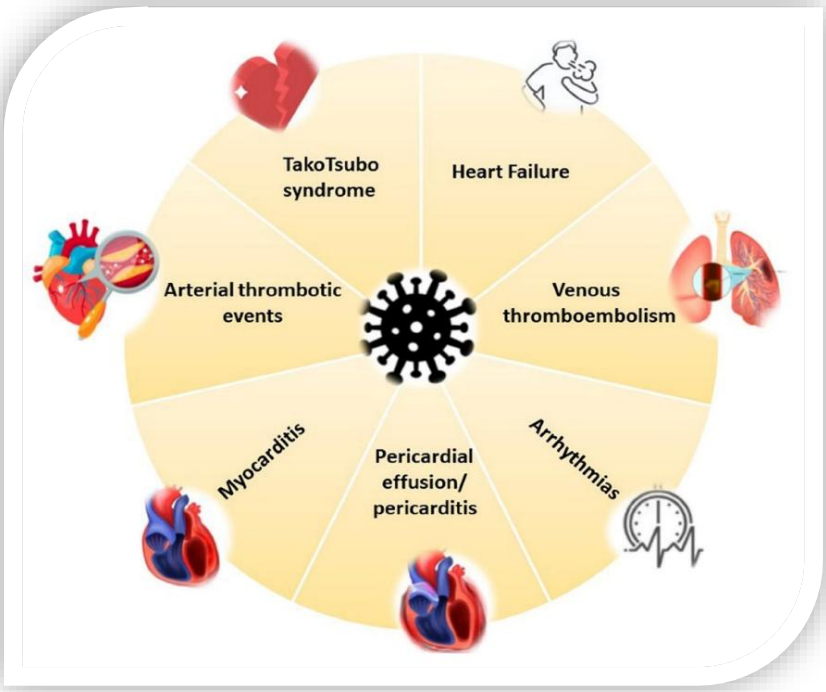
Results. Research results showed the following:

Tachycardia in 72% of patients and a heart " too much " to beat control "doing " state observed. 65% of patients' death fear and catastrophic thinking trend was determined. Worry level with heart hit frequency showed a positive correlation ($r = 0.48$, $p < 0.01$).

Group. (added psychotherapy group) in :

tachycardia episodes decreased by 34%, worry index decreased by 41%, and sleep quality improved by 37%. Compared to group 1, this difference is statistically significant reliable was ($p < 0.05$).



Discussion

The Psychosomatic Paradigm in Post-COVID-19 Recovery. The results of this study confirm that psycho-emotional factors play a decisive role in the development of cardiovascular complications following a coronavirus infection.

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We observed that autonomic nervous system (ANS) hyperactivity, chronic anxiety, and somatic hyperfixation (excessive focus on physical sensations) significantly reinforce functional heart rhythm disorders. In Group 2, where psychotherapeutic intervention was integrated into the clinical dynamic, we observed a faster and more sustainable positive shift. This proves that cardiovascular functional changes post-COVID-19 are not merely biological but are part of a complex "mind-heart" feedback loop. Effective treatment demands a multidisciplinary approach that addresses biological, psychological, and social factors simultaneously.

1. Integrated Pharmacotherapy. Cardiological supervision remains the foundation of treatment. While standard protocols must be followed to manage arterial pressure and rhythm breakdowns, the introduction of psychiatric support is crucial when anxiety, panic, or depression is detected. Targeted Medication: The use of SSRIs (Selective Serotonin Reuptake Inhibitors), anxiolytics, or mild sedatives should be considered.Key Insight: Choosing medication requires balancing the somatic condition with the psycho-emotional background to avoid adverse drug interactions and maximize efficacy. Cognitive Behavioral Therapy (CBT).In psychosomatic cases, medication alone is rarely sufficient.

Cognitive Behavioral Therapy (CBT) has proven highly effective in addressing "death anxiety" and the "hyper-control" of heartbeats. Therapeutic Goals: CBT identifies dysfunctional thoughts, reduces the "catastrophizing" of physical symptoms, and reshapes the patient's response to stress. Outcome: This intervention directly reduces autonomic hyperactivity, calming the physiological "fight or flight" response. Lifestyle Modification and Non-Pharmacological Measures: Stabilizing the cardiovascular system requires specific behavioral changes: Physical Activity: Low-impact, regular exercise such as walking, swimming, or yoga.Vagus Nerve Stimulation: Diaphragmatic breathing exercises are essential. Research shows these exercises activate the vagus nerve, which helps standardize heart rate and blood pressure. Self-Regulation: Adhering to

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sleep hygiene, restricting caffeine/stimulants, and reducing "digital stress" (information overload).

Conclusion:

This research demonstrates that post-coronavirus chest pains and palpitations are frequently not limited to the heart organ itself. The restoration of spiritual and psychological peace is an inseparable part of cardiovascular recovery. A holistic approach—combining traditional cardiology with psychotherapeutic intervention—leads to significantly better outcomes than standard care alone.

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