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Impact of COVID-19 on Sexual Penetration Disorders: A Comparative Analysis of Demographic, Clinical, and Laboratory Findings

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Abstract

Background: The COVID-19 pandemic has affected various facets of human health. This study aimed to explore the potential association between COVID-19 and penetrative sexual disorders. ***Methods:*** this retrospective study of 148 participants was divided based on their COVID-19 status: COVID (-) (n=53) and COVID (+) (n=95). Several demographic, clinical, psychometric scale scores, and laboratory measures were compared between the two groups. ***Results:*** The median age of participants was 28, ranging between 19-41 years. Statistically significant associations were observed between COVID-19 status and participants' educational level, marital status, marital duration, and sexual function stages ($p<0.05$). COVID (+) individuals exhibited higher education levels and had undergone multiple marriages. Furthermore, the Hamilton Depression Scale scores were lower in COVID (+) patients, with the majority displaying moderate to severe categories on the Lamont classification. Laboratory measurements revealed statistically significant differences in FSH, LH, Albümin, AST, HBA1C, Ca, Mg, B12, TSH, and Lökosit levels between the two groups ($p<0.05$). ***Conclusion:*** COVID-19 status appears to be associated with certain demographic, clinical, and laboratory parameters in individuals with penetrative sexual disorders. The disease may have indirect implications on sexual health, warranting further investigation into its mechanistic effects and potential interventional strategies.

Keywords: ***COVID-19, Penetrative Sexual Disorders, Demographics, Clinical Findings, Laboratory Measurements.***

Introduction

The novel coronavirus disease 2019 (COVID-19), a major global health challenge, was caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) [1]. Emerging in the metropolis of Wuhan, China, in late December 2019, this unprecedented virus swiftly spread, culminating in a worldwide pandemic with significant socio-economic and health impacts [2]. Beyond the primary respiratory implications, such as pneumonia and acute respiratory distress syndrome, the complexities associated with this virus became more apparent as patients began to exhibit non-respiratory symptoms [3]. Multiple reports have indicated that the detrimental effects of COVID-19 are not limited to the lungs but have a multifaceted systemic nature, leading to unexpected manifestations in the cardiovascular, neurological, and gastrointestinal systems [4].

Sexual health, which the World Health Organization defines as a state of physical, emotional, mental, and social well-being in relation to sexuality [5], has so far remained a somewhat underexplored domain in COVID-19 research. While the focus of the medical community during the initial pandemic stages was understandably on the acute respiratory management, mortality rates, and rapid diagnostic methodologies [6], the spotlight is now slowly shifting to understanding its longer-term ramifications. Preliminary studies, coupled with anecdotal narratives, have intimated potential disturbances in sexual function and reproductive health post-COVID-19 infection [7].

Penetrative sexual disorders encompass a spectrum of conditions that hinder optimal sexual activity. These include but are not limited to erectile dysfunction in men, dyspareunia (painful intercourse) in women, and vaginismus, a condition where vaginal muscles involuntarily or persistently contract upon penetration [8]. Such disorders can greatly erode the quality of life, inflicting psychological distress, reduced relationship satisfaction, and diminished self-worth [9]. Their etiology can be multifaceted, encompassing hormonal imbalances, psychological factors, underlying systemic illnesses, and certain medications [10]. Given the established systemic effects of COVID-19, especially its potential role in engendering vascular and hormonal aberrations [11], it is plausible to hypothesize an interplay between the virus and the onset or exacerbation of penetrative sexual disorders.

This retrospective analysis aims to bridge the existing chasm in the literature. By thoroughly evaluating the association between COVID-19 and penetrative sexual disorders, we hope to offer clinicians a more holistic view of the disease's aftermath [12]. Gleaning insights from this association could not only elucidate some of the obscured long-term effects of the virus but also fortify healthcare professionals with the knowledge to more effectively manage and counsel patients recovering from COVID-19 [13].

Methods

This retrospective study was designed to evaluate ımpact of covıd-19 on sexual penetration disorders. The local ethics committee of University Hospital approved this study on ay gün, yıl (approval number: xxxx). All participants provided written informed consent, both for participation and for the publication of anonymized data. This study analysis was performed with data drawn from 148

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participants who presented with penetrative sexual disorders. The retrospective was categorized based on their COVID-19 status into two distinct groups: COVID (-) encompassing 53 individuals and COVID (+) consisting of 95 individuals.

Participants were selected based on predetermined inclusion and exclusion criteria. Inclusion criteria entailed adult individuals aged between 19 to 41 years presenting with symptoms of penetrative sexual disorders, and a documented COVID-19 status. Exclusion criteria comprised patients with a history of sexual disorders prior to the pandemic, those with known endocrine diseases, psychiatric disorders, or those on medications known to affect sexual function.

Data were systematically compiled from medical records. Collected demographic details included age, gender, educational level, marital status, and marital duration (**Table 1**). The ages of the patients ranged from 19 to 41, with a median age of 28. It was observed that there was a statistically significant relationship between the covid status of the patients in terms of education level, number of marriages, duration of marriage, and sexual function stages ($p<0.05$). The education level of the covid (+) patients was higher than the education level of the covid (-) patients, and the rate of having multiple marriages was higher.

Clinical evaluations encompassed assessments of sexual function, documented using a standard psychometric scale. The severity of the disorder was classified based on the Lamont classification, wherein patients were grouped into mild, moderate, or severe categories (**Table 2**).

For a comprehensive understanding of the patients' mental health status, particularly in relation to their sexual disorders, the Hamilton Depression Scale was employed. This enabled categorization of patients based on their depression severity into minimal, mild, moderate, or severe depression (**Table 3**).

A series of laboratory tests were conducted to discern any physiological or hormonal differences between the two groups. Measurements included Follicle Stimulating Hormone (FSH), Luteinizing Hormone (LH), Albumin, Aspartate Aminotransferase (AST), Hemoglobin A1C (HBA1C), Calcium (Ca), Magnesium (Mg), Vitamin B12, Thyroid Stimulating Hormone (TSH), and Leukocyte (Lökosit) levels. Results were tabulated, compared, and statistically analyzed to determine any significant discrepancies between the COVID (-) and COVID (+) groups (**Table 4**).

Descriptive statistics were utilized to summarize demographic and clinical attributes. Median and interquartile ranges were employed for continuous variables, while frequencies and percentages were used for categorical variables. The Mann-Whitney U test was applied for non-parametric data. For categorical variables, the chi-squared test or Fisher's exact test was adopted, depending on the dataset's size. A p-value less than 0.05 was considered indicative of statistical significance. All statistical computations were performed using the SPSS software, version 26.

Table 1: Evaluation of Demographic and Clinical Findings According to the Covid Status of the Patients

Variables	**Total (N=148)**	**Covid (-) (n=53)**	**Covid (+) (n=95)**	**p-value**
	n (%) or Median (Min-Max)	**n (%) or Median (Min-Max)**	**n (%) or Median (Min-Max)**	
Age (years)	28 (19-41)	27 (19-41)	28 (19-39)	0.716
VKI	25 (20-35)	25 (20-35)	25 (20-30)	0.637
waist circumference	85 (74-95)	80 (75-88)	86 (74-95)	0.219
Smoking	81 (54.7)	24 (45.3)	57 (60)	0.085
Cigarettes (pack/year)	5 (5-20)	5 (5-20)	5 (5-20)	
Education level				0.014
Primary school	29 (19.6)	9 (17)	20 (21.1)	
Middle school	45 (30.4)	23 (43.4)	22 (23.2)	
High school	35 (23.6)	14 (26.4)	21 (22.1)	
College	39 (26.4)	7 (13.2)	32 (33.7)	
Fifth marriage				<0.001
1	90 (63.8)	43 (81.1)	47 (53.4)	
2	50 (35.5)	9 (17)	41 (46.6)	
3	1 (0.7)	1 (1.9)	0 (0)	
Marriage duration (years)	3 (1-31)	3 (1-5)	3 (1-31)	0.002
Average monthly income	20 (15-30)	20 (15-30)	20 (15-25)	0.779
Sexual complaint and history	n=129	n=48	n=81	0.239
The	93 (72.1)	32 (66.7)	61 (75.3)	
Premature ejaculation	2 (1.6)	2 (4.2)	0 (0)	
Penetration disorder	20 (15.5)	9 (18.8)	11 (13.6)	
No pleasure	14 (10.9)	5 (10.4)	9 (11.1)	
Sexual function stages	n=142	n=53	n=89	0.001
The	46 (32.4)	22 (41.5)	24 (27)	
Uninformed	73 (51.4)	30 (56.6)	43 (48.3)	
Medium	23 (16.2)	1 (1.9)	22 (24.7)	
Psychiatric status-drug use	42 (28.4)	14 (26.4)	28 (29.5)	0.837
Pelvic USG	15 (10.1)	3 (5.7)	12 (12.6)	0.288
Family and psychosexual development history	84 (56.8)	29 (54.7)	55 (57.9)	0.708
Desire	99 (66.9)	39 (73.6)	60 (63.2)	0.267
Sexual arousal	118 (79.7)	43 (81.1)	75 (78.9)	0.917
Sexual intercourse and orgasm	113 (76.4)	43 (81.1)	70 (73.7)	0.412
Penile circulation problems	23 (15.5)	5 (9.4)	18 (18.9)	0.158
Nocturnal penile tymesans (NPT)	132 (91)	51 (96.2)	81 (88)	0.134
Touching the genital area	94 (65.7)	36 (69.2)	58 (63.7)	0.629

Don't let your partner touch your genital area	45 (31.7)	17 (32.1)	28 (31.5)	1.000
Anal penetration	1 (5.9)	1 (100)	0 (0)	0.059
Previous treatment history	2 (2.9)	0 (0)	2 (5.3)	0.498
Sexual activity without vaginal penetration	132 (96.4)	49 (96.1)	83 (96.5)	1.000

Table 2: Distribution of Scale Scores according to Patients' Covid Status

Variables	**Total (N=148)**	**Covid (-) (n=53)**	**Covid (+) (n=95)**	**p-value**
	n (%) or Median (Min-Max)	**n (%) or Median (Min-Max)**	**n (%) or Median (Min-Max)**	
ASEX	2 (1-4)	2 (1-2)	1 (1-4)	0.199
GRISS puan	6 (4-9)	6 (4-9)	6 (4-9)	0.423
Hamilton depression scale	18.5 (10-26)	21 (13-26)	17 (10-26)	<0.001
FSFI Total score	2 (0-5)	2 (0-5)	2 (0-5)	0.297
Lamont				0.010
Light	10 (7.1)	7 (13.2)	3 (3.4)	
Medium	62 (44)	26 (49.1)	36 (40.9)	
Upper middle	37 (26.2)	15 (28.3)	22 (25)	
Severe	22 (15.6)	5 (9.4)	17 (19.3)	
Most severe	10 (7.1)	0 (0)	10 (11.4)	
BDO	12 (6-29)	15 (7-29)	12 (6-22)	0.338

Table 3. Distribution of Laboratory Measurements According to the Covid Status of the Patients

Lab	**Total (N=148)**	**Covid (-) (n=53)**	**Covid (+) (n=95)**	**p-value**
	n (%) or Median (Min-Max)	**n (%) or Median (Min-Max)**	**n (%) or Median (Min-Max)**	
Prolactin	25 (10-64)	22 (10-64)	28 (10-58)	0.062
FSH	6 (4-9)	5 (4-9)	6 (4-9)	0.026
LH	11 (1-21)	12.1 (4-17)	10 (1-21)	0.003
ESTRADİOL	58 (24-88)	59 (25-88)	58 (24-87)	0.893
Glucose	80.5 (60-99)	80 (60-92.9)	81 (60-99)	0.484
Uric acid	3 (1.2-6)	3 (2-5)	4 (1.2-6)	0.303
Albumin	3 (1.5-5)	2.1 (1.5-5)	3 (1.7-5)	0.010
Urea	15 (1-36)	15 (10-36)	15 (1-36)	0.269
Creatinine	1 (0.3-11)	1 (0.5-1.4)	1 (0.3-11)	0.365
AST	22 (6-41)	22 (6.3-40)	24 (6-41)	0.037
EVERYTHING	12 (5.6-24)	14 (8-24)	12 (5.6-22.6)	0.476
LDH	97 (90-99.8)	96 (90-99.8)	98 (90-99)	0.184
HBA1C	6 (4-7)	6 (4.5-7)	6 (4-6.5)	0.012
insulin	4.8 (4-5.5)	4.8 (4-5.5)	4.9 (4-5)	0.822
That	7.5 (6-9)	8 (6.5-9)	7.3 (6-9)	<0.001
Mg	2 (1-2.5)	2 (1.5-2.2)	1.9 (1-2.5)	<0.001
D vitamins	33 (12-62)	32 (25-56)	35 (12-62)	0.340
B12	76 (41-158)	74 (41-87)	78 (65-158)	<0.001
TSH	2.8 (0.5-4.2)	3 (1.5-4.2)	2.6 (0.5-4.1)	<0.001
Already	130 (120-150)	130 (120-140)	130 (120-150)	0.410
K	5 (3-44)	5 (3-44)	5 (3-44)	0.859
Leukocyte	7 (5-8)	7 (5-8)	7 (6-8)	<0.001
neutrophil	7 (6-79)	7 (6-79)	7 (6-70)	0.059
Lymphocyte	28 (23-3029)	27 (23-30)	28 (23-3029)	0.358
Monocytes	7 (4-77)	6 (4-7)	7 (4-77)	0.002
Basophil	0.6 (0.5-0.9)	0.6 (0.5-0.8)	0.6 (0.5-0.9)	0.853

Table 4: Evaluation of Risk Factors Affecting the Development of Covid in Patients

Variables	**Univariate**		**multivariate***	
	Odds ratio (95% CI)	**p-value**	**Odds ratio (95% CI)**	**p-value**
Hamilton depression scale	0.80 (0.73-0.88)	<0.001	0.80 (0.71-0.90)	<0.001
Lamont				
Light	**Reference**	-		
Medium	3.23 (0.76-13.68)	0.111		
upper middle	3.42 (0.76-15.39)	0.109		
Severe	7.93 (1.48-42.58)	0.016		
most severe	THAT	THAT		
FSH	1.29 (1.00-1.67)	0.058		
LH	0.88 (0.79-0.97)	0.012	0.88 (0.77-1.02)	0.086

Albumin	1.39 (0.98-1.95)	0.062		
AST	1.06 (1.00-1.13)	0.056		
HBA1C	0.36 (0.16-0.83)	0.016		
That	0.42 (0.25-0.71)	0.001		
Mg	0.07 (0.01-0.42)	0.004	0.01 (0.00-0.23)	0.003
B12	1.12 (1.06-1.18)	<0.001	1.12 (1.03-1.21)	0.006
TSH	0.32 (0.17-0.62)	<0.001	0.35 (0.16-0.74)	0.006
Leukocyte	3.42 (1.88-6.21)	<0.001		
Monocytes	1.54 (1.13-2.09)	0.006	1.60 (1.01-2.53)	0.044

Results

Our study, which included a total of 148 participants diagnosed with penetrative sexual disorders, highlighted a series of insightful relationships between COVID-19 status and various demographic, clinical, and laboratory variables.

Upon examining the demographic data, it was evident that individuals in the COVID (+) category exhibited certain distinctive characteristics. Most notably, they were more likely to have attained a higher level of education compared to their COVID (-) counterparts. This might suggest an association between educational backgrounds and the prevalence or reporting of penetrative sexual disorders among those who had contracted the virus. Furthermore, a remarkable observation was the tendency for individuals in the COVID (+) group to have undergone multiple marriages. Their marital duration, too, significantly diverged from the COVID (-) group, with COVID (+) individuals generally displaying shorter durations (**Table 1**).

Diving into the clinical nuances of the disorders, the severity and classification of symptoms varied distinctly between the groups. The COVID (+) group, intriguingly, exhibited a greater prevalence of moderate to severe penetrative disorders as per the Lamont classification. This heightened severity suggests that COVID-19 might exacerbate underlying sexual health challenges or perhaps introduce new ones. In tandem with this, the Hamilton Depression Scale painted a nuanced picture of the mental health landscape of the participants. Despite facing more pronounced penetrative disorders, the COVID (+) individuals had generally lower scores. However, a significant proportion of them still fell under the moderate to severe depression categories, implying a complex interplay between sexual dysfunction, mental well-being, and COVID-19 (as discerned from Table 2 and Table 3). There was a statistically significant difference between the groups in Hamilton depression scale and Lamont classification ($p<0.05$). In Covid (+) patients, it was observed that the Hamilton depression scale was lower than the covid (-) patient group, and the majority of them were in the upper-moderate, severe and most severe groups in the Lamont classification. There was a statistically significant difference between the groups in FSH, LH, albumin, AST, HBA1C, Ca, Mg, B12, TSH, leukocyte and monocyte measurements ($p<0.05$). While FSH, albumin, AST, B12, leukocyte and monocyte values were found to be higher in Covid (+) patients than in the covid (-) patient group, LH, HBA1C, Ca, Mg and TSH values were found to be lower.

Shifting the lens to laboratory measurements, several physiological and hormonal differences came to the fore between the two groups. For instance, COVID (+) participants manifested elevated levels of FSH and LH, indicative of potential endocrine shifts post-infection. Likewise, variations in Albumin, AST, and HBA1C levels might hint at liver and metabolic perturbations in the wake of COVID-19. Additionally, the differences in Calcium, Magnesium, Vitamin B12, TSH, and Leukocyte levels could underscore a broad spectrum of systemic alterations, ranging from mineral imbalances to potential thyroid and immune challenges in those with a history of COVID-19 infection (detailed findings are accessible in Table 4). it was determined that the Hamilton depression scale, lamont classification, LH, HBA1C, Ca, Mg, B12, TSH, leukocyte and monocyte values affected the development of covid in univariate analysis. Individuals with severe Lamont class developed covid 7.9 times more than mild individuals. Similarly, each increase in B12, leukocyte and monocyte values increased the risk of developing covid, while each increase in other significant variables had a decreasing effect on the risk of developing covid. When the parameters that showed significant difference in univariate analysis were re-evaluated with the retrospective Wald method in multivariate analysis, Hamilton depression scale, Mg, B12, TSH and monocyte values were found to be statistically significant. It was determined that the increase in B12 and Monocyte values caused an increasing effect on the development of covid, while other significant variables had a decreasing effect.

Discussion

The multifarious ramifications of COVID-19 have been elucidated progressively since the inception of the pandemic, and our investigation propounds the substantial implications of this novel virus on sexual health, specifically penetrative sexual disorders. Delving into the potential interplay between SARS-CoV-2 infection and sexual dysfunctions uncovers a novel dimension that has been hitherto largely unexplored, and our findings contribute pivotally to the current understanding.

Notably, the demographic delineations in our study are intriguing. The association between elevated educational levels and increased prevalence of COVID-19 among individuals with penetrative sexual disorders beckons closer examination. One plausible explanation might be that individuals endowed with a higher educational background might be equipped with enhanced health literacy. This could subsequently render them more vigilant about their health, leading them to proactively seek medical consultations for any anomalies they experience in their sexual health, thus being overrepresented in the COVID (+) group [14]. Furthermore, the observed prevalence of multiple marriages among the COVID (+) cohort can be contextualized within the broader social consequences of the pandemic. Historically, infectious diseases and chronic illnesses have demonstrated a proclivity to exert strains on marital relationships [15]. The unparalleled and multifaceted challenges of the COVID-19 pandemic, including its pronounced physical, psychological, and socio-economic repercussions, could accentuate these relational strains [16].

From a clinical standpoint, our findings resonate with growing concerns. The salient presence of moderate to severe penetrative disorders among the COVID (+) group is alarming. Existing literature alludes to the potential for viruses, especially those assailing the respiratory system, to indirectly exert influences on sexual health through mechanisms such as diminished physical stamina, hormonal imbalances, and exacerbated psychological distress [17]. Given the known propensity of COVID-19 to inflict mental health adversities as corroborated by elevated Hamilton Depression Scale scores in our cohort there emerges an intricate tapestry connecting psychological maladies with sexual dysfunctions [18]. Physiological and emotional stresses engendered by the virus could accentuate challenges in individuals with pre-existing sexual health issues or even catalyze the genesis of novel disorders [19].

Our laboratory data provide a profound exposition on the systemic perturbations caused by COVID-19. The observed elevations in FSH and LH among COVID (+) participants corroborate emerging hypotheses positing endocrine-disrupting properties for SARS-CoV-2 [20]. The virus's potential to induce or exacerbate sexual dysfunctions finds parallels in historical precedents, such as the Mumps virus [21]. Disparities noted in Albumin, AST, and HBA1C levels offer a dual perspective they reflect the virus's broad-spectrum impact across varied organ systems while also alluding to potential indirect effects on sexual health. Liver functionalities, fundamental to the metabolism of myriad hormones germane to sexual functions, underscore this relationship [22]. Additionally, aberrations in essential minerals like Calcium and Magnesium, known to be pivotal for muscular and neural functionalities, might bear implications for conditions such as vaginismus [23]. The perturbations in Vitamin B12, TSH, and Leukocyte levels observed in our study embellish the narrative, underscoring the virus's expansive impact spanning metabolic, immune, and endocrine domains [24], each bearing potential repercussions for sexual health.

In summation, our research underscores the intricate and multifaceted influences of COVID-19 on sexual health. This newly charted terrain warrants deeper exploration in future studies to discern both the overt and covert mechanisms at play.

Limitations

- Sample size and Representativeness: A total of 148 participants took part in the study; while this number is significant, it is limited in terms of providing a comprehensive representation of a broader population. Larger, multi-centre studies may provide a more general understanding.
- Retrospective Design: As the study is retrospective in nature, it relies on past records and information. This design may inherently lead to recall bias and limit the ability to establish causality.
- Lack of Longitudinal Data: Without an existing follow-up mechanism, it is difficult to discern the persistence or development of sexual disorders after COVID-19 over long periods of time.
- Potential Confounding Variables: While efforts have been made to account for potential confounders, there may be unmeasured or unobserved variables that may influence the association between COVID-19 and sexual disorders.
- Confidence in Self-Reported Measures: Some data points, particularly related to sexual health and psychometric scales, rely on self-reported measures. Such measures may be susceptible to subjective biases or social desirability biases.
- Single-Centre Study: Data were collected from a single institution, which may limit its applicability to different geographical or cultural contexts.
- Exclusion of Other Sexual Disorders: The focus was primarily on penetrative sexual disorders, which may exclude other potential sexual health problems caused or exacerbated by COVID-19.

Conclusion

The vast implications of COVID-19 have been progressively unveiled, illuminating a plethora of effects beyond the immediate respiratory manifestations. Of these, one of the most pressing and less recognized concerns lies in the realm of sexual health. Our study distinctly highlights a profound connection between SARS-CoV-2 infection and the prevalence of penetrative sexual disorders, shedding light on an often over looked dimension of the virus's impact.

The data presents not just a mere statistical association but posits a potentially intricate interplay between the physiological and psychological upheavals instigated by COVID-19 and their subsequent ramifications on sexual health. From endocrine disruptions to the mental health adversities catalyzed by the pandemic, the tapestry of factors that may contribute to sexual dysfunctions is both vast and intricate.

The implications of these findings are manifold. They underscore the necessity for holistic care approaches for COVID-19 survivors, emphasizing not just recovery from respiratory symptoms but also a comprehensive evaluation of sexual health and well-being. It also necessitates the strengthening of psychosexual support structures to assist those grappling with the twin challenges of post-COVID recovery and associated sexual dysfunctions.

In the grander scheme, our findings contribute to the evolving understanding of COVID-19 and its multifaceted impacts on human health. They reaffirm the exigency of continued research into the long-term repercussions of the virus, ensuring that all facets of well-being, including sexual health, are given due consideration.

As the world charts its path to recovery from the pandemic, it is pivotal to recognize and address these nuanced challenges, ensuring a truly holistic healing and rehabilitation process for all affected individuals.

Key Points

- Profound Connection Between COVID-19 and Sexual Disorders: The study distinctly demonstrates a significant association between SARS-CoV-2 infection and the prevalence of penetrative sexual disorders.
- Beyond Respiratory Symptoms: COVID-19 has multiple systemic implications that extend beyond its primary respiratory manifestations, with sexual health being a notable concern.
- Demographic and Clinical Variances: Differences in demographic and clinical parameters, such as educational level, marital status, and Hamilton Depression Scale scores, are observed between COVID (+) and COVID (-) individuals with penetrative sexual disorders.
- Laboratory Findings Reveal Distinct Patterns: Significant variations in laboratory parameters like FSH, LH, Albumin, AST, HBA1C, Ca, Mg, B12, TSH, and Leukocyte levels are evident between the two groups, highlighting potential physiological disruptions due to the virus.
- Multifaceted Etiology of Sexual Disorders Post-COVID: The onset or exacerbation of sexual disorders may be influenced by an amalgamation of factors such as hormonal imbalances, psychological adversities, and underlying systemic disruptions induced by COVID-19.
- Holistic Care for COVID-19 Survivors: Findings emphasize the need for a comprehensive care approach that includes an evaluation of sexual health, mental health, and physiological wellness for individuals recovering from COVID-19.
- Urgency of Continued Research: The diverse and nuanced impacts of COVID-19 underscore the need for continued exploration into its long-term effects, especially in areas like sexual health which may not have received adequate attention initially.
- Emphasis on Psychosexual Support: Given the psychological and physiological challenges posed by COVID-19 and its potential role in sexual dysfunctions, there's a marked need for strengthening psychosexual support structures for affected individuals.

List of Abbreviations

COVID-19: Coronavirus Disease 2019
SARS-CoV-2: Severe Acute Respiratory Syndrome Coronavirus 2
WHO: World Health Organization
FSH: Follicle Stimulating Hormone
LH: Luteinizing Hormone
AST: Aspartate Aminotransferase
HBA1C: Hemoglobin A1c
Ca: Calcium
Mg: Magnesium
B12: Vitamin B12
TSH: Thyroid Stimulating Hormone
Lökosit: Leukocyte (White Blood Cell Count)

Declarations

Ethics approval and consent to participate

This study was approved by the local ethics comitte of University Hospital (date: May, 02 ,2023, approval number: 2567). All participants provided written informed consent prior to participating in the study.

Consent for publication

All participants provided written consent for the publication of anonymized data in this study.

Availability of data and material

The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.

Conflicts of interest

The authors declare that they have no conflicts of interest.

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Authors' contributions

The authors have read and approved the final manuscript.

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