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Impact Of COVID-19 On Sexual Function

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Abstract

Corona virus (COVID-19) pandemic affected the people lives worldwide. The infection with COVID-19, social distancing, curfew and limitations leading to changes in lifestyles resulted in multiple systemic and psychological problems in individual's health. Although there are numerous data in term of effects of (COVID-19) infection on the respiratory, gastrointestinal and nervous systems, few studies are available regarding its influence on men's sexual function. **The aim of this study** is to detect the impact of COVID-19 on the sexual performance of COVID-19 recovered men. A cross-sectional study was conducted between September 2021 and March 2022 in Erbil and Duhok cities (Kurdistan region of Iraq). One hundred male patients recovered from COVID-19 infection enrolled in the study. International Index of Erectile Function-15 scoring was assessed twice; one before and the second one at least two months after recovery from COVID -19 infection. The mean IIEF-15 score was lower for participants after COVID-19 infection (66.9 ± 8.39) when compared to pre COVID-19 period (70.95 ± 1.14) ($p < .001$). By comparing their scores of pre with post Covid-19, significant decrement were found in the scores of (erectile function, orgasmic function, intercourse satisfaction and overall satisfaction) ($p < .001$, $p < .001$, $p < .001$, $p < .001$, respectively), only the reduction in desire domain was statistically insignificant ($p = .01$). The results indicate that COVID-19 infection has a significant effect on men sexual performance on short term.

تأثير كوفيد - ١٩ على الاداء الجنسي

اثر جائحة فيروس كورونا (كوفيد -١٩) على حياة الناس في جميع أنحاء العالم. أدت الإصابة بـ COVID-19 والتباعد الاجتماعي وحظر التجول والقيود التي أدت إلى تغييرات في أنماط الحياة إلى مشاكل نظامية ونفسية متعددة في صحة الفرد. على الرغم من وجود العديد من البيانات فيما يتعلق بتأثيرات عدوى (COVID-19) على الجهاز التنفسي والجهاز الهضمي والجهاز العصبي ، إلا أن هناك القليل من الدراسات المتاحة بشأن تأثيره على الوظيفة الجنسية للرجال. الهدف من هذه الدراسة هو الكشف عن تأثير COVID-19 على الأداء الجنسي للرجال المتعافين من COVID-19. أجريت دراسة مقطعية بين أيلول ٢٠٢١ وأذار ٢٠٢٢ في مدينتي أربيل ودهوك (إقليم كردستان العراق). تم تسجيل مائة مريض ذكر تعافوا من عدوى COVID-19 في الدراسة. تم تقييم الفهرس الدولي لوظيفة الانتصاب - ١٥ مرتين ؛ واحد قبل والثاني بعد شهرين على الأقل من الشفاء من عدوى COVID-19. كانت النتيجة المتوسطة IIEF-15 أقل للمشاركين بعد الإصابة بـ COVID-19 (66.9 ± 8.39) مقارنة بفترة ما قبل-COVID-19 (70.95 ± 1.14) ($p < .001$). تم العثور على انخفاض كبير في درجات (وظيفة الانتصاب ، وظيفة النشوة الجنسية ، الرضا عن الجماع والرضا العام $p < .001$) ، (وظيفة الانتصاب ، وظيفة النشوة الجنسية ، الرضا عن الجماع والرضا العام $p < .001$) ، فقط الانخفاض في مجال الرغبة كان غير ذي دلالة إحصائية ($p < .01$). تشير النتائج إلى أن عدوى COVID-19 لها تأثير كبير على الأداء الجنسي للرجال على المدى القصير.

Introduction

By the end of 2019, the infectious agent responsible for the viral infection coronavirus disease-2019 (COVID-19), severe Acute Respiratory Syndrome-related Coronavirus type 2 (SARS-COV-2) had been reported in Wuhan (China) for the first time, which resulted in a massive outbreak across China, followed by a universal pandemic and dramatic human death all over the world [1-4].

It was extremely infectious and spread mostly by direct contact with contaminated surfaces and via the respiratory tract. COVID-19 symptoms can range from mild to severe and it can be fatal.

These made the World Health Organization (WHO) to announce the infection as a global pandemic in March 2020 and promoting all countries to take exceptional measures [5], including closure of academic centres, reduced commercial activities, limitation of travels, social distancing measures and prevent human crowding.

Although these actions helped to reduce the viral spread, but they also produced socioeconomic problems, worldwide panic and negative inclusion on the psychological health resulted from stress and anxiety in many people [6,7]. In addition to COVID-19 infection effects on respiratory system, clinical studies suggest that it has involved other systems as well including; neurology symptoms like impaired taste and smell sensations, headache and dizziness are commonly seen in COVID-19 [8]. Gastrointestinal symptoms, particularly diarrhea being the most common symptom [9,10]. Cardiovascular and genital particularly through its effect on endothelial cells and vasculature [10-12].

Upon the above mentioned possible psychological and organic effects of COVID 19 infection, and based on WHO sexual health definition which is (a state of emotional, mental, physical and social

well-being in relation to sexuality) [13], it is expected that COVID 19 infection may possibly affect the sexual function of an individual.

Aim

To detect the impact of COVID-19 infection on male sexual function.

Patients and methods

A prospective cross sectional study conducted between September 2021 and March 2022 in Erbil and Duhok cities (KRG)/Iraq. A total number of 100 male participants recovered from COVID-19 were comprised in the study. Face-to-face interviews used for data collection.

Inclusion Criteria are married male, had no sexual complaints before the period of COVID-19 infection.

Exclusion criteria are men with known erectile dysfunction history, those who have already been treated by anxiolytics or antidepressants and those who have any comorbidities that influence sexual function (eg. Diabetes Mellitus, Hypertension, endocrine diseases). Informed consents were obtained from the participants before completing the questionnaires (with declarations of confidentiality).

For data collection, questionnaire forms have been used, Specific data points were questioned in these forms included patient's age, date of covid-19 infection, duration of infection, time of cure and questions for evaluation of sexual function using International index of erectile function questionnaire-15 (IIEF-15). The 15-question International Index of Erectile Function (IIEF) questionnaire is a multidimensional and validated questionnaire form that has been demonstrated to be beneficial in clinical trials for assessing erectile dysfunction and treatment effects. Score of 0-5 is given to each of the 15 questions which evaluate the 5 major domains of male sexual function: sexual desire, erectile function, orgasm, intercourse satisfaction

and overall satisfaction [14]. Each participant has been advised to fill the sexual function score (based on their sexual experience) twice; first one before and second one after at least two months of being cured from a proved COVID-19 infection.

The study had been approved by ethical committee of Kurdistan Higher Council of Medical Specialties (KHCMS).

The Statistical Package for Social Sciences (SPSS, version 26) was utilised for statistical analysis. For continuous variables mean and standard deviation were calculated. Shapiro–Wilk test was used to test for normality of distribution of the variables. To compare data of prior and post COVID-19, the Wilcoxon signed rank test has been applied and a *p* value of less than 0.05 regarded significant differences in the value between the two values.

Results

In this study, 100 COVID-19 recovered males were included. Their age and the period being cured from COVID-19 are presented in (Table 1).

The participants ranged in age from (24 - 54) and the mean of their age was (37.32 ± 7.07) years. The mean duration (months) after recovery from COVID-19 infection was (4.07 ± 1.22) months.

In term of total sexual function (IIEF-15) score, the results from the period before getting COVID-19 infection and the results of the period after being cured from infection (70.95 ± 1.14 , 66.9 ± 8.39 , respectively) indicate that COVID-19 has impact on male sexual function ($p < .001$) Regarding the five domains of IIEF-15 (sexual desire, erectile function, orgasmic function, intercourse satisfaction and overall satisfaction), when we compared their scores of pre with post Covid-19 separately, significant reduction was observed in (erectile function, orgasmic function, intercourse satisfaction and overall satisfaction) scores ($p < .001$, $p < .001$, $p < .001$, $p < .001$, respectively), except in desire domain, the decline of post COVID-19 sores was statistically insignificant ($p = .01$) (Table 2).

Table 1 Age of participants and their COVID-19 cured period.

Characteristics	Total (n=100)
Age, Year (mean \pm SD)	37.32 ± 7.07
Period being cured from COVID-19 by months (mean \pm SD)	4.07 ± 1.22

Table 2 IIEF-15 scores of pre and post COVID-19 infection in men (n = 100).

Domains of IIEF	Pre COVID-19 (mean \pm SD)	Post COVID-19 (mean \pm SD)	<i>P</i> value
Erectile function	29.79 ± 0.47	28.47 ± 3.96	$< .001^*$
Orgasmic function	10 ± 0	9.49 ± 1.32	$< .001^*$
Sexual desire	9.14 ± 0.69	8.97 ± 0.98	.01
Intercourse satisfaction	12.25 ± 0.77	10.67 ± 1.76	$< .001^*$
Overall satisfaction	9.77 ± 0.42	9.3 ± 1.35	$< .001^*$
The total IIEF score	70.95 ± 1.14	66.9 ± 8.39	$< .001^*$

IIEF: International Index of Erectile Function.

*Significant at level of 0.05. *Wilcoxon* test.

Discussion

Nature catastrophes and crises like wars and pandemic diseases can negatively affect social and individual activities, for example the frequency and sexual behaviour have been significantly affected after earthquakes [15-19].

One of the causes that explains the diminished desire and sexual function is the change in psychological status, anxiety and stress of individuals [20].

In a recent Chinese study, follow up was done for patients recovered from COVID-19 for 6 months. They discovered that the patients had psychological distress as well as impaired erectile function in the first visit. With further follow up, improvement was observed in erectile function along with improvement of psychological state during the second visit [21].

Here, we also assessed the sexual function of patients recovered from COVID-19 to determine if there is any effect of COVID-19 infection on the sexual performance in men.

The data we obtained from this study showed that the total sexual function (IIEF-15) score and its five domains scores in most participants were higher before COVID-19 infection compared to the period recovered from infection.

This study revealed that (sexual desire, erectile function, orgasmic function, intercourse satisfaction, overall satisfaction and the total IIEF15) scores decreased in (8%, 18%, 20%, 77%, 23% and 87%) of participants respectively. In concordance to the current study, in a study conducted in Turkey, showed a significant reduction in all IIEF 15 domains scores, but the reduction of sexual desire domain was statistically insignificant [22].

Also in accordance with findings in this study, an online survey study for 3500 participants revealed a decline in the frequency of sexual intercourse in 41% of the individuals [23]. Another Chinese study found that overall satisfaction and frequency ratio had dropped [24].

Many factors may involve in the aetiology of impaired sexual function, including psychological, organic (neurogenic, hormonal, vascular), drugs and environmental. [25]

The potential mechanisms which may involve in the development of ED in survivors of COVID-19 were reviewed in a literature, it showed that COVID-19 infection can induce impaired pulmonary hemodynamics, psychological distress, endothelial dysfunction and sub clinical hypogonadism, all of which might possibly lead to the development of ED and sexual problems. [26]

Conclusions

According to the results of this study, the sexual function as a whole and all the domains of IIEF15 have decreased in COVID-19 recovered males, except the decrement in sexual desire domain is statistically insignificant.

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