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Indian Journal of Cardiovascular Disease in Women

Cardiovascular *Guest Editorial*

Female Gender and COVID-19 Aftermath: Audacious Times Ahead?

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Received : 04 February 2023
Accepted : 15 February 2023
Published : 11 April 2023

DOI
10.25259/IJCDW_31_2023

Quick Response Code:

INTRODUCTION

In 2023, as more parts of the world depart from major COVID-19 illness, the aftermath on the female gender is even more of a holocaust situation. Just as in a family, no member is forgotten or left behind, so also this pandemic in its transitive phases, past 2 years affected all human species – the neonates, children, males and females. However, it was the family's nurturing lady which bore the greatest strain and thrust of the pervasive COVID-19 epidemic. We should be sharing our energy or experience with those around us, including members of our family.[1]

Magee *et al*., in January 2023, launched the result of their research on COVID-19 and women's health which attracted many manuscripts to be focused either on women's health in general and also on the indirect consequences of the pandemic.[1] The social impact is much less than the mental, cardiac, and general physical health of the females all over the world.[2]

ANGIOTENSIN-CONVERTING ENZYME 2 (ACE2) RECEPTOR DIFFERENCE EXIST BETWEEN MALES AND FEMALES

The difference between males and females is more apparent post COVID-19 for following reasons: First, the modulation of cellular receptors and coreceptors used by the SARS-CoV-2 virus to enter the human host is different. Second, the ACE2 gene expression is regulated by estrogens, whereas the TMPRSS2 gene, which is an essential gene required for the virus to enter the cell, is controlled by a promoter which is an androgen responder. Third, the ACE2 gene has a dual action of receptors – one for SARS-CoV-2, it is virus entering the cell, and lastly, also a key modulator of the renin-angiotensin system, a signaling pathway for vascular function, wherein it converts angiotensin II into angiotensin. The latter acts through its G protein receptor Mas, to obtund the vasoconstrictive and inflammatory effects of angiotensin II and these are all mediated through the estrogens.

SEX-RELATED DISPARITIES EXISTED EVEN FOR COVID-19 VACCINES

Disparities between the male and female gender also existed for the efficacy and safety of the COVID-19 vaccines. Literature showed in four different clinical trials, that past vaccination, males had a greater risk lowering effect of contracting the COVID-19 virus than females (Nearly 33% less in males, than females). The inclination in reporting adverse effects of the vaccination, being a finer aspect in the fairer gender, most trials also showed that the adverse effects of the vaccine were seen more in women than the men.[3]

SUDDEN ATTACK: DOCTORS FLAG-MUTED HEART DISEASE SYMPTOMS IN WOMEN POST-COVID-19

An analysis of COVID cases published in the journal "Nature Medicine" showed that COVID survivors are 55% more likely to experience a serious cardiovascular event after recovery. For men, chest pain is a common symptom but for women, the symptoms are more subtle and can include pain or aching in chest and in the upper arm.

More serious effect of cardiac disease exists in females, than in males, postmenopause. Females may be more protected than males for developing coronary artery disease, but postmenopause once IHD sets in, they fare, worst than men. This could be attributed to their high levels of LDL cholesterol and BMI. COVID-19 hastens the onset of CAD in women, postmenopause, to quote Dr. Kunal Sarkar from Kolkata.[4]

THE LONG COVID-19 HEART

Long COVID-19 heart has been recently seen and observed in an array of patients and this leads to increased cardiovascular risks.[5] COVID-19 patients who did not fully recover and continued to have lingering cardiac problems were recently labeled as long-COVID-19 patients (also termed as long haulers or post-COVID patients).

The April issue of Nature (April 2021) found that these long haulers may have sequel in many organ systems, especially in cardiovascular organ. Most of the major adverse cardiovascular events included myocardial infarction, stroke and all-cause mortality, dysrhythmias with major incidences of atrial fibrillation; heart failure; and a few also suffer from non-ischemic cardiomyopathy[4] [Figure 1].

Notwithstanding the vaccination effect, these authors found an increased incidence of myocarditis and pericarditis post pandemic, regardless of the fact that these patients had not received the vaccination (any dose). COVID-19 in females whether hospitalized or not, had an increased incidence of these complications even if they were home bound.

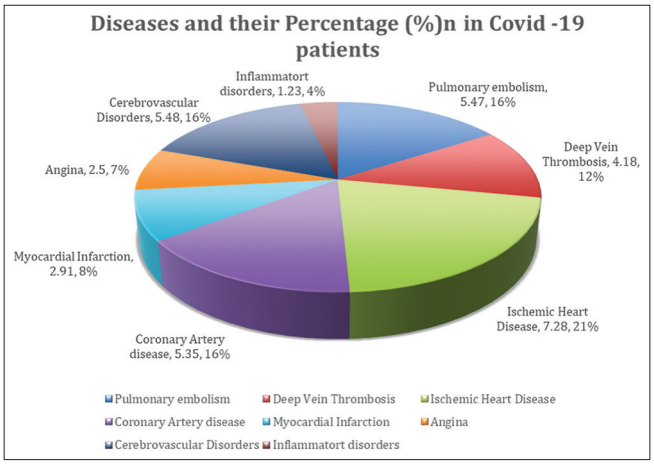

Figure 1: Disease and their percentage in the COVID-19 patients.

Dr. Al-Aly showed in his vast post data COVID-19[6] analyzed that COVID-19 was an equal "opportunity offender" – with equal risks in young and old, males and females, in smokers and non-smokers, in those with high-risk factors and those without risk factors, in diabetics and non-diabetes – COVID-19 did not spare any subgroup![6]

WHAT AILS THE FEMALE OVERALL HEALTHCARE?

Most women were working at temporary job portfolios before and during the COVID-19 Pandemic. Many factors retard positive female health. These include increased childcare burdens, attitudinal bias, and a slower economic recovery, reduced private, and public spending capability by most on female education or childcare – make women leave the labor market work permanently.

Women were at the core of the fight in COVID-19 as health-care doctors, nurses, and workers. COVID-19 pandemic outsmarted, more pregnancy complications and an increase in the female mental and social health issues with enhanced self-reported anxiety and depression in many female patients.

During the pandemic, more women on the COVID-19 frontline were to be seen of the 49 million care workers in the European Union, who have been most exposed to the virus, around 76% were found to be women! Women seemed to be overrepresented at work – too as frontline workers for essential services ranging from sales to childcare hospital services, places, which remained opened during the pandemic. Combining teleworking with child and home was a greater toll on the health of the females.[7]

THE FEMALE ENTREPRENEURSHIP TOO SUFFERED A SETBACK

COVID-19 also had a retarding effect on female entrepreneurship, especially female-owned microenterprises in developing and underdeveloped countries, where female laborers form the backbone of labor.

Thus COVID-19 virus greatly increased the burden of unpaid labor, whose onus rests more on women than men. This leads to women losing their jobs faster than men in the post COVID-19 era.

THE ECONOMIC REGRESSION: LARGER EFFECT ON WOMEN THAN MEN

Yet the COVID-19 left a regressive effect, on gender equality, this economic crisis has left the Indian soft gender

to arguably face 1.8 times more vulnerability in losing their jobs than men.[8] Women who make up to 39% of world's employment account for 54% of overall jobs losses post pandemic era. This is also so, because the COVID-19 virus, has disproportionately increased the burden of unpaid care, whose onus lies more with women than men. This leads to women's employment dropping faster than before despite their being separate sectors for men and women employment.[5]

COVID-19 AND GENDER EQUALITY: COUNTERING THE REGRESSIVE EFFECTS

An increase in digitalization and breaking free of stereotypes and access to digital-based technologies, such as use of mobile phones and internet and other digital accessories, has to be done away with in this post-COVID period of enhanced growth. To be promoted gender diversity and greater funding to women based startups and enterprises. This is all possible when we do away with biased in selection and recruitment of this power laden female gender and recognize their true potential.

REMEDIAL MEASURES TO OVERCOME THE ECONOMIC CRISES

Increasing digital infrastructure, stereotypes that inhibit women's access to mobile phones and improving women's digital literacy measures to promote gender diversity in funding for women entrepreneurs, including eliminating biases in recruitment and selection processes.

CONCLUSION

India's fight against COVID-19 pandemic was heroic. With its massive vaccination drive of over 2.2 crore doses in past 2 years, India had moments of joy, celebrating its 74th republic day, this year, joyously without masks, when many super power are either at war or still engrossed in civil COVID-19 crisis. As South Korea has shown in recent years, soft power exports can magnify, a country's weight in global affairs and technology and lend influence in international affairs, so also a healthy soft gender (the women power) can change not just the family, but the national and international influence with its enigmatic, virtuous, nurturing, and serving charismatic multitasking approach to life. Hence, save the female health-care system to its maximum is an urge to influential leadership.[9] In the history of the world, there has never been a storm that lasted. Only resilience and perseverance helps wither all storms with grit, determination, and everlasting resilience. The female gender does it best.

REFERENCES

1. Magee LA, Benetou V, George-Carey R, Kulkarni J, MacDermott NE, Missmer SA, *et al*. Editorial: COVID-19 and women's health. Front Glob Womens Health 2022;3:861315.
2. Available from: https://www.europarl.europa.eu/news/en/headlines/society/20210225STO98702/understanding-the-impact-of-covid-19-on-women-infographics [Last accessed on 2023 Jan 24].
3. Megiorni F, Pontecorvi P, Gerini G, Anastasiadou E, Marchese C, Ceccarelli S. Sex-related factors in cardiovascular complications associated to COVID-19. Biomolecules 2021;12:21.
4. Available from: https://www.timesofindia.indiatimes.com/city/kolkata/sudden-attack-docs-flag-muted-heart-disease-symptoms-in-women-post-cov/articleshow/90651607.cms [Last accessed on 2023 Feb 01].
5. Abbasi J. The COVID heart-one year after SARS-CoV-2 infection, patients have an array of increased cardiovascular risks. JAMA 2022;327:1113-4.
6. Xie Y, Xu E, Bowe B, Al-Aly Z. Long-term cardiovascular outcomes of COVID-19. Nat Med 2022;28:583-90.
7. The Lancet Commissions Lancet. Vol. 400. 2022. p. 1967-2006. Available from: https://www.thelancet.com/commission/healthy-ageing-inchina [Last accessed on 2023 Jan 31].
8. Available from: https://www.mckinsey.com/featured-insights/future-of-work/covid-19-and-gender-equality-countering-the-regressive-effects [Last accessed on 2023 Jan 20].
9. Chhabra SK, Kaur G, Aggarwal R, Bansal N, Kishore H, Goyal M, *et al*. Outpatient attendance in COVID pandemic lockdown: An observational study. Indian J Cardiovasc Dis Women 2023;8:18-24.

How to cite this article: Kapoor PM. Female gender and COVID-19 Aftermath: Audacious times Ahead? Indian J Cardiovasc Dis Women 2023;8:87-9.