Public Health 198 (2021) 171–173

Contents lists available at ScienceDirect

Public Health

journal homepage: www.elsevier.com/locate/puhe

Short Communication

Contextualising gender intersectionality with the COVID-19 pandemic

K. Baig

Institute of Infection Prevention and Research, Karachi, Pakistan

ARTICLE INFO

Article history:
Received 6 April 2021
Accepted 25 July 2021
Available online 27 August 2021

Keywords:
COVID19
Gender inequality
Healthcare access
Surveillance

ABSTRACT

Objectives: To explore the association of gender inequality index (GII) with healthcare access and quality index (HAQI) for the male to female ratio of confirmed COVID-19 cases.
Study design: Secondary analysis of COVID-19 cases with GII and HAQI datasets.
Methods: Data for sex-disaggregated COVID-19 cases were collected from Global Health 50/50, for GII from the United Nations Development Programme (UNDP) and for HAQI from the Institute for Health Metrics and Evaluation (IHME). We used Spearman's correlation in SPSS version 23 to evaluate the association between the variables.
Results: Cambodia had the highest male to female ratio (M:F) of 4.08:1, followed by Pakistan (M:F = 2.85:1) and Nepal (M:F = 2.69:1). We observed a positive correlation between GII and M:F ratio (Spearman's rho = 0.681, *P*-value <0.001) and a negative correlation between HAQI and M:F ratio (Spearman's rho = −0.676, *P*-value <0.001).
Conclusions: Countries with institutionalised gender disparities and poor healthcare access and quality tend to have higher M:F ratios of confirmed COVID-19 cases; thus, highlighting underutilisation of testing services, influenced by multiple individuals, social and policy factors. Robust gender-based data are required to understand disparities throughout the continuum of care and to devise gender-responsive pandemic strategies.

Gender is a socially constructed character of a man, woman, boy and girl. The intersection of gender with other socio-economic, environmental and biological factors defines susceptibility to a disease and its outcome.[1] The intersectionality of gender in infectious diseases is vital in predicting health-seeking behaviour and experience in access to healthcare services. As coronavirus disease 2019 (COVID-19) was classified as a pandemic, and communities opted for different mitigation and containment strategies, the incidence of gender-based violence markedly increased globally.[2] The pandemic's social, economic and mental health repercussions further widened the gap in gender disparities in health.

In May 2020, the World Health Organisation (WHO) stressed the need for investments in gender-sensitive research in understanding the social, mental health and economic impact of COVID-19.[3] Sex-disaggregated data throughout the continuum of care is imperative to understanding the access to services, and the burden and severity of the disease among different genders, in addition to being essential in preparing a gender-inclusive response. However, according to the data published by Global Health 50/50, only eight countries provided gender-stratified data on testing, although 110 countries provided gender-stratified data on confirmed COVID-19 cases and related deaths.[4]

Data for sex-disaggregated cases were collected from Global Health 50/50,[4] whereas the gender inequality index (GII) for 2018 was accessed from the United Nations Development Programme (UNDP).[5] The GII is a composite score reflecting inequality between men and women in reproductive health, empowerment and the labour market. Details on the calculation of the GII can be accessed through technical notes.[5] A GII score closer to 1 means more favourable conditions for males. We also evaluated the correlation between healthcare access and quality index (HAQI) and the male to female ratio (M:F) of confirmed COVID-19 cases. Data for HAQI were obtained from the Institute of Health Metrics and Evaluation (IHME), and details about its calculation can be accessed at IHME.[6] We only included the countries that reported sex-segregated data up to September 2020. We used Spearman's correlation to evaluate the association of the M:F ratio of confirmed COVID-19 cases with the two variables. All analyses were performed using SPSS version 23 (IBM, Chicago, US).

The sex-segregated COVID-19 data were only available for 72 countries up to September 2020. Cambodia had the highest male to

E-mail address: kamran.baig@iipr.pk.

https://doi.org/10.1016/j.puhe.2021.07.033

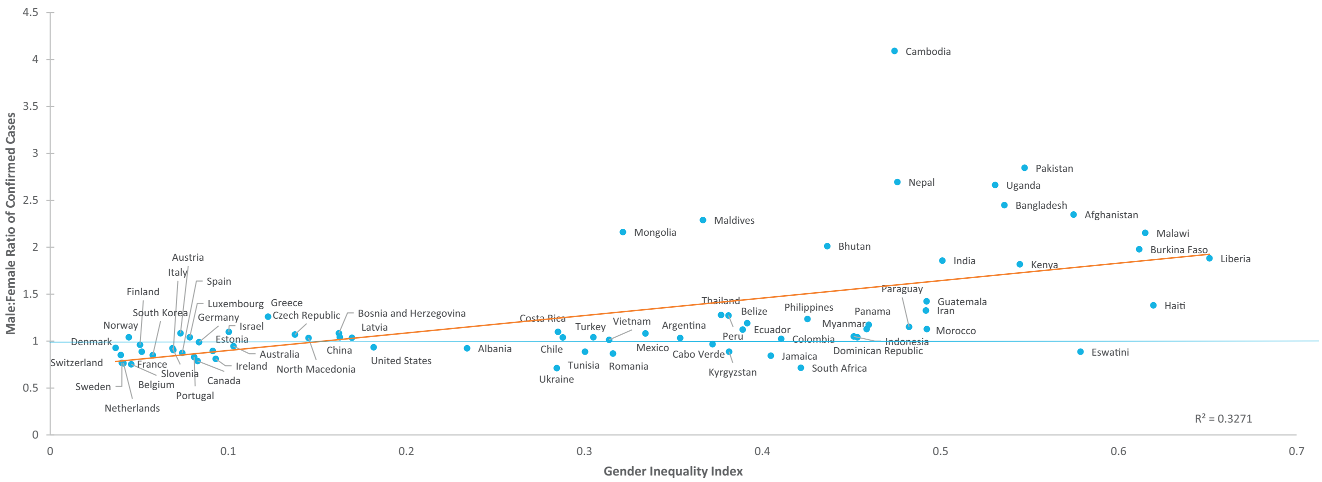

Fig. 1. Correlation of gender inequality index and confirmed COVID-19 cases.Source/Notes: SOURCE [Authors Analysis of GII and COVID19 Cases].

female ratio (M:F) of 4.08:1, followed by Pakistan (M:F = 2.85:1) and Nepal (M:F = 2.69:1). Interestingly, we observed a positive correlation between the two variables, and increasing GII was correlated with more male cases (Spearman's rho = 0.681, *P*-value <0.001), as indicated in Fig. 1.

Tadiri et al.[7] observed a similar relationship, but their data were limited up to April 2020; we included more countries with data up to September 2020. The consortium presented a conceptual framework of factors related to gender disparity in the prevalence of COVID-19 cases.[7] Women in countries with higher GII do not have a significant share in the labour workforce, including essential services, which protected them from exposure to COVID-19. Although this presumption might help understand the reduced level of exposure, it cannot be misinterpreted as 'no exposure'. As men are exposed to COVID-19, their chances of spreading it within the household put the women at increased risk of COVID-19 infection. A review of different household transmission studies suggested that the spouses of index cases are at increased risk of getting the disease compared with other household contacts.[8]

Our analysis of the correlation between the M:F ratio and HAQI indicated a negative correlation (Spearman's rho = −0.676, *P*-value <0.001) as shown in Supplementary Fig. S1 (see supplementary material). Countries with a lower HAQI score (i.e. poorer access and quality) had a higher M:F ratio of confirmed COVID-19 cases. Although HAQI does not provide gender-stratified access information, it was used here to measure accessibility to healthcare services. The accessibility to services is a significant contributor to defining women's health-seeking behaviour, particularly in countries with high GII. In the pandemic's initial phase, when many countries implemented lockdown measures, delivery of essential services (including maternal, newborn, child health and tuberculosis services) were greatly disrupted. As the transport system was halted, accessibility to testing centres was further reduced, perhaps more so for the female section of society. With the adjustment in mitigations strategies, policies were also adjusted. Most of the policy adjustments emphasised routine screening of essential workers in major industries. Since men constitute a large proportion of the formal and informal workforce, they were more likely to be tested, and hence, were 'counted more' than women.

A meta-analysis of global confirmed COVID-19 cases indicated male sex to be a risk factor for disease severity and mortality but did not show any difference in sex-stratified confirmed cases.[9] On the contrary, men constituted more confirmed cases in countries with high GII. The most plausible explanation of low known cases among women in countries with institutionalised gender inequality could be the low utilisation of testing services. This underutilisation by women might have been influenced by accessibility, health-seeking behaviour, household responsibilities, cultural norms and decision-making, social stigma, policies and limited financial resources.

Economic pressures force middle- and low-income families to live predominantly as joint or extended families. Such a family system poses overwhelming social responsibilities to female members of the household. In addition to the regular chores, they also take care of ill family members. Women are thus increasing their susceptibility to the disease. However, household responsibilities and limited participation in health-seeking decisions force these women to neglect their ailments/symptoms unless it warrants a visit to a healthcare facility.

Living in extended families provides financial, mental health and social security; however, it might also have some disadvantages. Since the beginning of the pandemic, the disease has mainly been stigmatised. Testing avoidance due to anticipated stigma and stereotyping has been reported among several population subgroups.[10] Women living in extended families, usually fearing to be stereotyped or discriminated against, obscure their symptoms to avoid testing and therapeutic services. Hence, this highlights the importance of cultural and social aspects in COVID-19 risk communication strategies.

Public health implications

Without concrete documented evidence, it is difficult to identify gender disparities in susceptibility to the disease and access to healthcare services. Simple sex-stratified statistics on identified COVID-19 cases provides limited intelligence to devise and drive a gender-responsive pandemic plan. A more detailed gender-based collection and analysis of the data are required to understand the disparities throughout the continuum of care from screening to therapeutics or death. This is not a resource-consuming activity; however, it does highlight priorities to policymakers when addressing equity and gender-specific responses to a pandemic crisis.

Author statements

Ethical approval

Not required (the study did not include human subjects and is based on secondary analysis of aggregated data).

Funding

None declared.

Competing interests

None declared.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.puhe.2021.07.033.

References

1. Manandhar M, Hawkes S, Buse K, Nosrati E, Magar V. *Gender, health and the 2030 Agenda for sustainable development*. Bull World Health Organ; 2018.
2. WHO. *COVID-19 and violence against women what the health sector/system can do*. 2020. Who/Srh/2004.
3. Wolrd Health Organization. *Gender and COVID-19: advocacy brief*. WHO; 2020.
4. Global Health-50/50. *The COVID-19 sex-disaggregated data tracker*. Internet. Global Health 50/50; 2020 [cited 2020 Nov 6]. Available from: https://globalhealth5050.org/the-sex-gender-and-covid-19-project/the-data-tracker/.
5. UNDP. *: gender inequality index (GII) | human development reports*. Internet. UNDP; 2018 [cited 2020 Nov 6]. Available from: http://hdr.undp.org/en/content/table-5-gender-inequality-index-gii.
6. Global Burden of Disease Collaborative Network. *Global burden of disease study 2015 (GBD 2015) healthcare access and quality index based on amenable mortality 1990–2015*. GHDx [Internet]. IHME; 2015 [cited 2020 Nov 7]. Available from: http://ghdx.healthdata.org/record/ihme-data/gbd-2015-healthcare-access-and-quality-index-1990-2015.
7. Tadiri CP, Gisinger T, Kautzy-Willer A, Kublickiene K, Herrero MT, Raparelli V, et al. The influence of sex and gender domains on COVID-19 cases and mortality. *CMAJ: Can Med Assoc J* 2020;**192**(36):E1041. https://doi.org/10.1503/CMAJ.200971.
8. Goldstein E, Lipsitch M, Cevik M. On the effect of age on the transmission of SARS-CoV-2 in households, schools and the community. *J Infect Dis* 2021;**233**(3):362–9. https://doi.org/10.1093/infdis/jiaa691.
9. Peckham H, de Gruijter NM, Raine C, Radziszewska A, Ciurtin C, Wedderburn LR, et al. Male sex identified by global COVID-19 meta-analysis as a risk factor for death and ITU admission. Internet *Nat Commun* 2020 Dec 1;**11**(1):1–10. https://doi.org/10.1038/s41467-020-19741-6 [cited 2021 Mar 16].
10. Germain S, Yong A. COVID-19 highlighting inequalities in access to healthcare in england: a case study of ethnic minority and migrant women. Internet *Fem Leg Stud. Springer Science and Business Media B.V.* 2020;**28**:301–10. https://doi.org/10.1007/s10691-020-09437-z [cited 2021 Mar 16].