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Original Research Article

Impact of COVID-19 in social, physical and functional quality of life among reproductive female patients

Progga Mahajabin^{1*}, Zakia Sultana², Md. Ziaul Islam³, Tanjina Sarmin⁴, Mst Maksuda Parvin⁵, Mossa Nupur Aktar², Md. Husnaion Zubery⁶, Falguni Binte Rahman⁷

¹Department of Epidemiology and Research, Cardiovascular Health, National Heart Foundation, Dhaka, Bangladesh

²Department of Obstetrics and Gynaecology, Shaheed M. Monsur Ali Medical College Hospital, Sirajganj, Bangladesh

³Department of Community Medicine, National Institute of Preventive and Social Medicine, Dhaka, Bangladesh

⁴Department of Immunization and Vaccine Development, World Health Organization, Bhola, Bangladesh

⁵Department of Obstetrics and Gynaecology, Sarkari Karmochari Hospital, Fulbaria, Dhaka, Bangladesh

⁶Department of Radiology and Imaging, Rajshahi Medical College Hospital, Rajshahi, Bangladesh

⁷Department of Pharmacology and Therapeutics, Naogaon Medical College, Naogaon, Bangladesh

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*Correspondence:

Dr. Progga Mahajabin,

E-mail: pmahajabin@gmail.com

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ABSTRACT

Background: Those who recovered from the COVID-19, suffers various health-related as well as mental problems. To measure a person's disease impact, disability, and mental condition, health-related quality of life (HRQoL) is used. The aim of this study was to assess the state of health-related quality of life of women of reproductive age after recovery from COVID-19.

Methods: This cross-sectional study was conducted in Department of Reproductive and Child Health, National Institutes of Public Health and Social Medicine in Mohakhali, Dhaka, Bangladesh, during the period from January to December 2020. Total 202 women of reproductive age who were recovered from COVID-19 were included in this study.

Results: In this study, majority of the women (46%) were within 36-50 years and majority (20.8%) had bronchial asthma. Most of the respondents suffering from COVID-19 from 15 days to 3 months (43.6%). In a study, the average HRQOL score among respondents was 66.01 (± 11.81), with physical well-being scoring highest (19.89 ± 4.41) and functional well-being lowest (14.44 ± 4.19). Age-wise, respondents aged 15-25 scored highest in various health domains. Statistical analysis revealed significant differences in Fact-G scores across age groups, with 15-25-year-olds scoring highest, indicating a notable age-related variation in health quality.

Conclusions: Findings of the study shows that fifteen to twenty-five years' age of women's HRQOL was higher than other groups. Educated women have better HRQOL score. Physical wellbeing was higher than other domains and functional wellbeing was lower than other domains. Elderly women who had comorbidities had lower HRQOL score.

Keywords: COVID-19, Functional quality of life, Physical quality of life, Productive female patients, Social quality of

INTRODUCTION

The COVID-19 pandemic, caused by the novel coronavirus SARS-CoV-2, has emerged as a global health crisis with far-reaching implications beyond the immediate

viral infection.¹ While the primary focus has been on the epidemiology and clinical management of the disease, its impact on various aspects of quality of life, particularly among productive female patients, warrants comprehensive exploration. This study aims to investigate the multifaceted effects of COVID-19 on the social,

physical, functional, and health-related quality of life (HRQoL) among this demographic. Quality of life, a broad multidimensional concept, encompasses an individual's physical health, psychological state, level of independence, social relationships, personal beliefs, and their relationship to salient features of the environment.² Health-related quality of life (HRQoL), a subset of this concept, specifically focuses on how an individual's health affects their quality of life.³ The pandemic has uniquely challenged these dimensions, especially for women who often juggle multiple roles in society. The social quality of life has been significantly affected by COVID-19, primarily due to social distancing measures, lockdowns, and the fear of contagion. These factors have led to increased social isolation and changes in family dynamics, which are particularly impactful for women who are often primary caregivers and heavily involved in maintaining family and social networks.⁴ The disruption of social support systems can have profound psychological and emotional effects, contributing to increased stress and anxiety levels. Physically, the implications of COVID-19 extend beyond the acute illness. Long-term effects, often referred to as 'long COVID', include fatigue, joint pain, and shortness of breath, which can severely impact the physical quality of life.⁵ For productive female patients, who may already face gender-specific health issues, these symptoms can further complicate their physical well-being and daily functioning. Functional quality of life, which encompasses the ability to perform everyday activities, has also been impacted. The pandemic has introduced new challenges in work-life balance, particularly for women who may be managing remote work, household responsibilities, and childcare simultaneously. This increased burden can lead to burnout and reduced functional capacity.⁶ In terms of HRQoL, the pandemic's impact is multifaceted. The fear of contracting the virus, along with the psychological impact of the pandemic, such as anxiety and depression, can significantly diminish HRQoL.⁷ Moreover, the healthcare system's focus on COVID-19 has led to delayed or reduced access to routine healthcare services, which is particularly concerning for women's health needs.⁸ The COVID-19 pandemic has had a profound impact on the quality of life, particularly among productive female patients. This study aims to provide a comprehensive understanding of these impacts across social, physical, functional, and health-related domains. By doing so, it seeks to inform targeted interventions and policies to mitigate these effects and support the well-being of this vulnerable group during and beyond the pandemic. Aim was to assess the state of health-related quality of life of women of reproductive age after recovery from COVID-19.

METHODS

This cross-sectional study was conducted in Department of Reproductive and Child Health, National Institutes of Public Health and Social Medicine in Mohakhali, Dhaka, Bangladesh, during the period from January to December 2020. Total 202 women of reproductive age who were

recovered from COVID-19 were included in this study. For conducting the study, protocol approved from the ethical Institutional Review Board (IRB) of the National Institute of Preventive and Social Medicine (NIPSOM). Before data collection, informed written consent was taken from the authorities. After developing the questionnaire, data was collected by telephone interview with verbal consent using semi structured questionnaire and validated bangle version of Fact G scale with permission of author. Before starting the interview, the respondents were informed about the objectives and purpose of the study.

Inclusion criteria

Patient recovered from COVID-19 disease who are RT PCR negative now, female in reproductive age (15-49 years) were included.

Exclusion criteria

Individuals with positive result in diagnosis of COVID-19, and patients who did not give consent were excluded from this study.

Statistical analysis

After collection of data, all data were checked and cleaned. SPSS (Statistical Package for Social Science) Version 26 and Microsoft Excel was used for data analysis. Test of significance was performed according to objectives as needed. The test statistics used to analyze the data were descriptive statistics and descriptive interference according to the demand of the study with 95% CI (confidence interval). Level of significance was set at 5% (0.05).

RESULTS

Table 1 demonstrates the demographic characteristics of the study subjects. Among the respondents, majority of the women (46%) were within 36-50 years. The mean age of the respondents was 35.12 years (SD±8.26125). Majority of the respondents 33.2% were belonged to the group of Honors. Majority 78.2% of the respondent's family member were within 2-5, while 21.8% respondents had 7 - 12 family member. In the present study, majority (20.8%) had bronchial asthma, 20.3% had hypertension and 17.3% had diabetes.

Figure 1 shows the distribution of the respondents according to duration of suffering from COVID-19. Majority of the respondents suffering from Covid 19 from 15 days to 3 months (43.6%), 4 to 6 months (37.1%) and rest of the respondents suffering from Covid 19 above 6 months (19.3%).

Table 2 presents the distribution of respondents by mean score of HRQOL and domain. Among the respondents, mean±SD of total HRQOL score was (66.01±11.81). Among domains, mean±SD score was highest in physical

well-being (19.89±4.41) and lowest in functional well-being (14.44±4.19).

Table 1: Demographic characteristics of the study subjects (N=202).

Characteristics	Frequency	%	
Age group	15-25 years	29	14.4
	26-35 years	80	39.6
	36-49 years	93	46
	Mean±SD	35.12±8.26	125
Educational qualification	Illiterate	5	2.5
	Primary	10	5
	SSC	33	16.3
	HSC	47	23.3
	Honors	67	33.2
	Masters	40	19.8
Family member category	2-6	158	78.2
	7-12	44	21.8
H/o comorbidities	Hypertension	41	20.3
	Diabetes	35	17.3
	Bronchial asthma	42	20.8

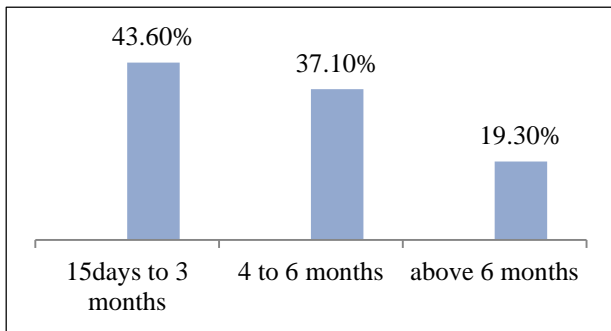


Figure 1: Distribution of the respondents according to duration of suffering from COVID-19 (N=202).

Table 3: Distribution of respondents mean score of different health related quality of life according to age group (N=202).

Age group	N	Physical well-being	Social well-being	Emotional well-being	Functional well-being	HRQOL
		Mean±SD	Mean ±SD	Mean±SD	Mean±SD	Mean±SD
15-25 years	29	22.51±4.15	17.45±4.24	16.96±2.79	16.24±4.43	73.18±11.48
26-35 years	80	20.16±3.87	16.99±4.07	15.82±3.47	15.28±3.62	68.27±10.06
36-49 years	93	18.84±4.59	15.48±4.35	14.65±3.95	13.15±4.22	61.99±11.75

Table 4: Relationship between age and Fact G score among respondents (N=202).

Age group	N	Mean	95% confidence interval for mean		F, df	p-value
			Lower bound	Upper Bound		
15-25 years	29	73.18	68.81	77.55	F=13.86 df= 2, 199	P=0.0001*
26-35 years	80	68.27	66.03	70.51		
36-49 years	93	61.99	59.57	64.41		

*statistically significant

Table 2: Distribution of respondents by mean score of HRQOL and domain (N=202).

Domain	Mean±SD
Physical well-being	19.89±4.41
Social well-being	16.36±4.29
Emotional well-being	15.47±3.75
Functional well-being	14.44±4.19
Total HRQOL	66.01±11.81

Table 3 shows distribution of respondents mean score of different health related quality of life according to age group. The number of respondents aged (15-25) were 29, mean 22.51 and SD 4.15, age (26-35) is 80, mean 20.16 and SD 3.87, age (36-49) is 93, mean 18.84, SD 4.59. Their maximum score was 28 and minimum periodically 10, 10 and 6.

Table shows that the number of respondents aged (15-25) were 29, mean 17.45 and SD 4.24, age (26-35) is 80, mean 16.99 and SD 4.07, age (36-49) is 93, mean 15.48, SD 4.35. Periodically their maximum score was 28, 26.33 and 24.50. Minimum score was 10, 6 and 4.20. In the current study, the number of respondents aged (15-25) were 29, mean 16.96 and SD 2.79, age (26-35) is 80, mean 15.82 and SD 3.47, age (36-49) is 93, mean 14.65, SD 3.95. Periodically their maximum score was 21, 22 and 23. Minimum score was 11, 8 and 2. The number of respondents aged (15-25) were 29, mean 16.24 and SD 4.43, age (26-35) is 80, mean 15.28 and SD 3.62, age (36-49) is 93, mean 13.15, SD 4.22. Their maximum score was 23. Periodically their minimum score was 9, 7 and 2. Lastly, the number of respondents aged (15-25) were 29, mean 73.18 and SD 11.48, age (26-35) is 80, mean 68.27 and SD 10.06, age (36-49) is 93, mean 61.99, SD 11.75. Periodically their maximum score was 96, 90 and 91. Minimum score was 54, 49 and 19.20.

Table 4 demonstrates the relationship between age and Fact G score among respondents. In the table the data shows that among the respondents the highest mean score was found within the age group (15-25), mean = 73.18%. Periodically the age group (26-35) mean were 68.27% and the age group (36-49) mean were 61.99%. To see the relationship between age and Fact-G score among respondents one way between group ANOVA was conducted. There was statistically significant difference at $p < 0.05$ s in Fact-G scores for these three groups.

DISCUSSION

COVID-19 affects different people in different ways. Most infected people will develop mild to moderate illness and recover without hospitalization. Some study revealed that women had lower scores for HRQoL than men. This study was a cross-sectional study carried out among 202 female respondents. Respondents were selected from NIPSOM lab.

In this study, most of the women (46%) were within age group 36-50 years. The mean age of the respondents was 35.12 years ($SD \pm 8.26125$). This study was conducted in reproductive age group in Bangladesh, that's why majority of women were within 36-50 years. In Bangladesh, 21% of females have no education. Thirty-one percent of females have some secondary education, while 13% have a secondary education or higher. In this study majority of the respondents 33.2% were belonged to the group of Honours, while 23.3% respondents were in the group of Hsc. Only 2.5% respondents were illiterate. 5% respondents were primary level and 19.8% respondents had the education of masters. In this study that majority 78.2% of the respondent's family member were within 2-5, while 21.8% respondents had 7 to 12 family member. Family size ranged from 3 to 12 members in this study. According to the World Health Organization (WHO) report published in 2018, prevalence of hypertension among adults (aged 18+ years) in Bangladesh is 21% which is not different from what we observed in our findings.⁹ While comparing our findings with reports from other neighbouring regions, we also see similar results. The WHO reported a prevalence of hypertension among adults in neighbouring India, Pakistan, Nepal, and Sri Lanka as 24%, 25%, 26%, and 24% respectively in 2015. In our study, major comorbidities included 35.0% diabetes mellitus (DM), 28.4% hypertension (HTN), 16.6% chronic obstructive pulmonary disease (COPD). Islam et al found that most of the respondents were non hypertensive (79.7%) and 20.3% were hypertensive.¹⁰ In the study, Mohiuddin et al study among the respondents most of the respondents were non diabetic (82.7%) and 17.3% were history of diabetes.¹¹ In this study, a significant portion of respondents suffered from COVID-19 symptoms ranging from 15 days to over 6 months. This duration reflects the phenomenon of 'long COVID', where symptoms persist beyond the acute phase of the infection.¹² In this study, Fact G scale was used to assess health related quality life of female after recovered from COVID-19. Among the

respondents, mean of total HRQOL score was 66.01. Among domains, mean score was highest in Physical well-being 19.89 and lowest in Functional well-being 14.44. Among the respondents, mean \pm SD of total HRQOL score was (73.7 \pm 8.39). Among domains, mean \pm SD score was highest in Physical Well-Being (PWB) (22.07 \pm 3.87) and lowest in Functional Well-Being (FWB) 18.65 \pm 4.17. Mean score of PWB and SWB were higher among the other domain which altogether may be the fact that people got much information about the disease process and its consequences and took the medical support to cure them and to maintain a healthy life. In a study of Hossain et al, those domain physical wellbeing that the number of respondents aged (15-25) were 29, mean 22.51 and, age (26-35) were 80, mean 20.16 and age (36-49) were 93, mean 18.84.¹³ In case of social wellbeing, aged (15-25) mean were 17.45, aged (26-35) mean were 16.99 and age d (36-49) mean were 15.4. In case of emotional wellbeing, aged (15-25), mean 16.96 age (26-35), mean 15.82, age (36-49) mean 14.65. In case of functional wellbeing that the number of respondents aged (15-25), mean 16.24, age (26-35) is mean 15.28 and SD 3.62, age (36-49) mean 13.15. Fact G total score of respondents aged (15-25) mean 73.18 age (26-35) mean 68.27, age (36-49), mean 61.99. So, after comparing means, we can say that health related quality of life of female range 15 to 25 years was higher than other groups. Among the respondents the highest mean score was found within the age group (15-25). To see the relationship between age and Fact-G score. There was statistically significant difference at $p < 0.05$ s in Fact-G scores for these three groups. Hoch berg test indicate that the mean score of (36-49) age group was differ from (15-25) age group and (26-35) age group. Some study shows lower HrQoL was significantly related to higher age. The HrQoL of the participants changed positively over a two-year period. At baseline, the participants scored a median of 20 (IQR 8-33) and after 2 years.¹⁵ Older people with multi morbidity experienced a better HrQoL over a two-year period, where quality of sleep contributed the most to a better HrQoL. Klompstra et al, the older age groups of patients had lower scores of HRQoL compared with the younger patients.¹⁴ This may reflect the fact that COVID-19 impacts more on older patients.

This study has some limitations. The sample size is relatively short which does not represent the actual number of the patients. This is a cross-sectional study. But, the result could be more specific if it was a case-control or a cohort study. The study population is collected from only the NIPSOM lab. The data can be collected from other sources like some dedicated covid hospitals.

CONCLUSION

During the global COVID-19 pandemic, people infected with COVID-19 were more likely to have low HRQoL. HRQoL of women is determined by the physical, emotional, social and functional domains. Findings of the study shows that fifteen to twenty-five years' age of women's HRQoL was higher than other groups. Educated

women have better HRQOL score. Physical wellbeing was higher than other domains and functional wellbeing was lower than other domains. Elderly women who had comorbidities had lower HRQOL score.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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