



Impact of Covid-19 restrictions on overall health in postmenopausal Indian women: An online survey

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Abstract

Aim: This study aimed to find the impact of a covid-19 pandemic on overall health in postmenopausal Indian women.

Materials and methodology: This was an online survey study conducted over six months from September 2021 to February 2022. The reference population for the study was postmenopausal Indian women who fulfilled the inclusion criteria. The survey was conducted by filling out a google form by the participants using the PROMIS10 scale.

Result: Impact on overall health in postmenopausal Indian women during the period of covid-19 restrictions was found to be statistically significant concerning the value of the PROMIS10 scale ($P < 0.001$).

Conclusion: It was concluded that there is a significant impact of covid-19 restrictions on overall health comprising both the physical and mental health aspects in postmenopausal Indian women.

Keywords: Covid-19, health, impact, Indian, postmenopausal

Introduction

The global pandemic of covid-19 has extensively affected tasks in daily life involving physical, social, and overall psychological health. The set of people at the prime risk of extended hospitalization and death mainly was either in the elder age bracket, dropped immunity, or co-morbid situations due to several metabolic or lifestyle-induced disorders¹. Psychological symptoms such as stress, anxiety, and depression caused due to the pandemic are found more prominently in women². Menopause activates some passive schemas, and using appropriate interventions and awareness improves well-being in women psychologically³. It is clearly understood that patients with lower levels of physical activity are severely affected by the disease and patients with a healthier dietary pattern were less severely affected^{4,5}. Various studies showed a significant decrease in the physical activity and mental health in young as well as old women globally due to the pandemic^{6,7}.

Multiple kinds of research were conducted on the middle-aged and geriatric population in the light of the Covid-19 pandemic situation explaining the importance of being physically active on several occasions^{8,9,10,11}. The danger of developing cardiovascular diseases in postmenopausal women is explained in literature mainly due to low physical activity levels. Women experience the first event of the cardiovascular disease usually after menopause, making the post-menopausal age group the main target of developing cardiovascular disease among women¹². The majority of the elderly in general come under the physically inactive group (73.8%) with no significant association to any particular factor with physically inactive elderly¹³. A higher level of recreational physical activity, including walking, is associated with a significant reduction of heart failure risk in community-dwelling older women¹⁴.

Therefore, to obtain a general health situation of post-menopausal women in India during the Covid-19 pandemic, the scale called the Patient-Reported Outcomes Measurement Information System Global Health Short Form (PROMIS10) was chosen to contain 10 items in the form of questions. It measures physical, mental, and social health domains. PROMIS10 is developed based on item response theory. It has been implemented in several health systems for patient-reported outcomes measurement in orthopedic, cardiovascular, and primary care subjects. It is efficient in assessing global physical, mental, and social health in 10 questions that require less than 2 minutes to complete¹⁵.

Study Procedure

The purpose of this study was to check the impact of Covid-19 restrictions on overall health in postmenopausal Indian women. The study began with approval from an institutional ethical committee at Garden City University. The study was conducted online via subjects filling out a google form. The responses chosen were based on inclusion and exclusion criteria. Inclusion criteria of permanent loss of menstrual cycle for a year and beyond and with age 45 and above¹⁶. Exclusion criteria were women of non-Indian nationality, Women with altered ovarian function including bilateral ovariectomy, and Women on estrogen-containing hormone supplemented

medical therapy². The google form which was shared had clear information explaining the nature of the project and consent for participation. Subjects were assured that the collected information will not be misused in any form. The intervention outcome measure was a scale named, Patient-Reported Outcomes Measurement Information System Global Health Short Form (PROMIS10). The scale comprises of total 10 questions 5 representing physical health domains and 5 representing mental health domains. According to this criterion 80, responses were received for the study which fulfilled the inclusion criteria. There were no responses that were excluded from the study.

Data Analysis

To interpret the significance of the PROMIS10 scale, one sample T-test was used. To interpret the correlation between the physical and mental scores and between physical and mental scores separately with age, correlation coefficients namely Karl-Pearson, Spearman, and Kendall were used.

Results

Table 1: Descriptive Statistics of age and mean score % of Physical and Mental Global Health Rating Scale The mean age of the study participants was 55.7 years with a standard deviation of 4.8 years.

	Age.	GPHRS (%)	GMHRS (%)
Valid	80	80	80
Missing	0	0	0
Mean	55.750	51.438	44.875
Std. Deviation	4.827	11.451	12.803

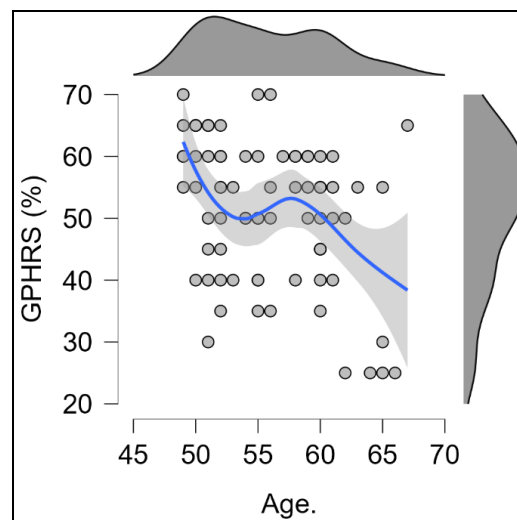


Fig 1: Progression of age against Global Physical Health Rating Score (%) Physical health scores are greatest in percentage between the age groups of 45 to 50 years being 60%.

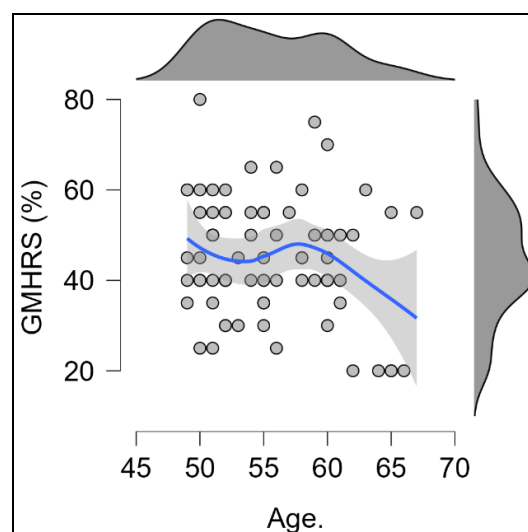


Fig 2: Progression of Age against Global Mental Health Rating Score (%) Mental health scores are greatest in percentage between the age group of 45 to 50 years being 50%.

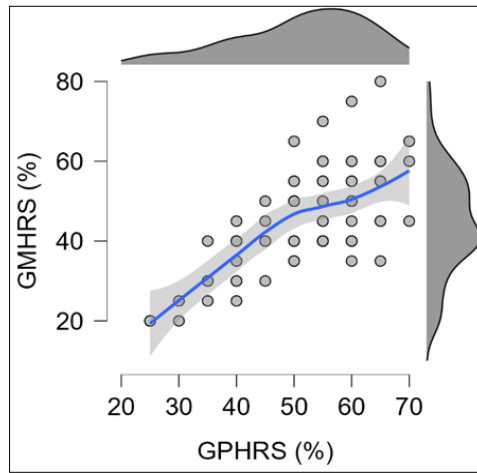


Fig 3: Progression of Global Physical Health Rating Score (%) against Global Mental Health Rating Score (%) Physical health score % are progressed better than mental health score %.

Table 2: One-Sample T-Test for Global Physical Health Rating Score and Global Mental Health Rating Score conditioned with age The physical and mental health domain scores are indicated to be significantly affected with a p-value of < 0.001.

Age.	103.294	79	<.001
GPHRS (%)	40.176	79	<.001
GMHRS (%)	31.351	79	<.001

Table 3: Correlation Table for Physical and mental scores against age and physical versus mental scores

Pearson		Spearman		Kendall			
		R	P	Rho	P	tau B	P
GPHRS (%)	- GMHRS (%)	0.714	<.001	0.649	<.001	0.534	<.001
GPHRS (%)	- Age.	-0.371	<.001	-0.362	<.001	-0.271	0.001
GMHRS (%)	- Age.	-0.186	0.099	-0.144	0.203	-0.106	0.199

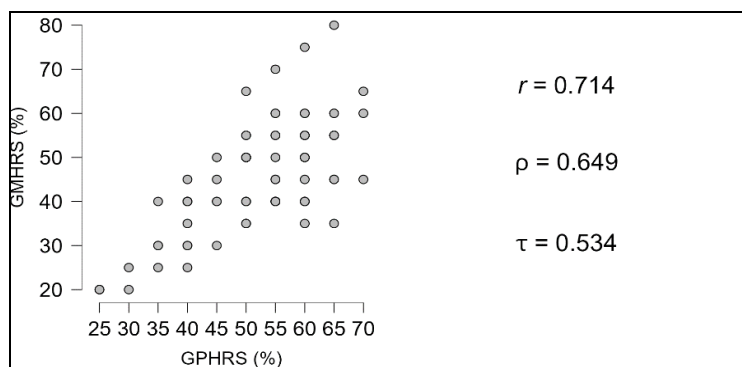


Fig 4: Correlation of Global Physical Health Rating Score (%) versus Global Mental Health Rating Score (%) Zero relationships were found indicating physical and mental scores are in neutral relation to one another.

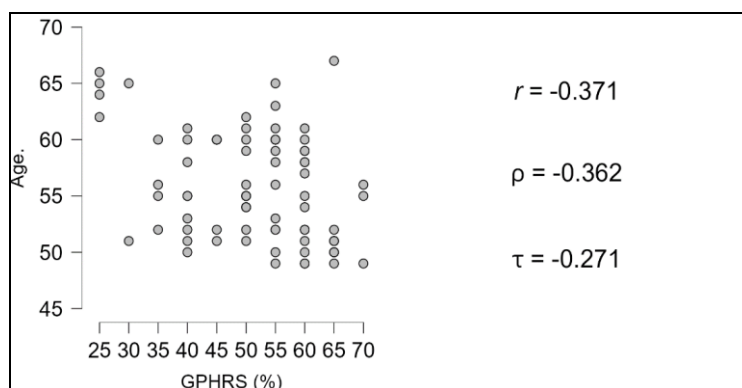


Fig 5: Correlation of Global Physical Health Rating Score (%) versus Age Zero correlation was found indicating that age and physical health are neutral to one another.

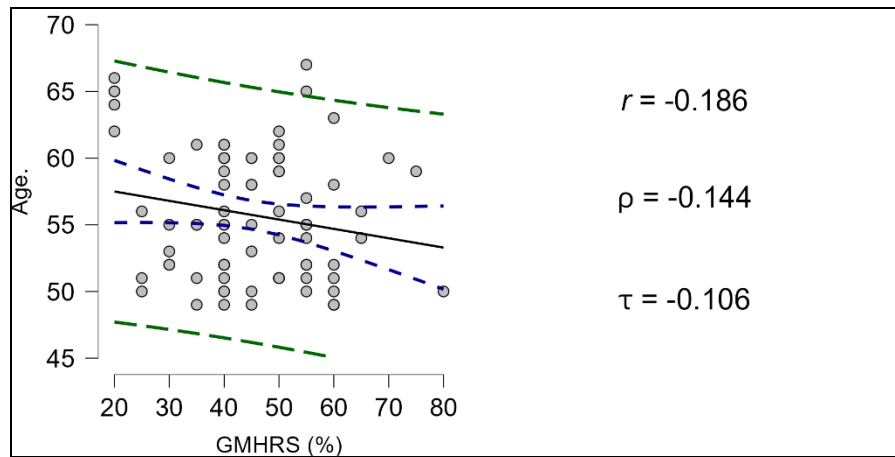


Fig 6: Correlation of Global Mental Health Related Score (%) versus Age

A negative correlation was found indicating as age increases mental health decreases.

According to table 1, the descriptive statistics of the conducted study are shown where the mean age of the study participants was shown to be 55.7 years with a standard deviation of 4.8 years. A total of 80 responses were calculated. The total mean score for physical health components of the PROMIS10 scale was 51.4% and the total mean score for mental health components of the PROMIS10 scale was 44.8%. It was thus indicated that all 80 participants had better physical health scores than mental health scores. According to figure 1, it is indicated that the physical health scores are greatest in percentage between the age groups of 45 to 50 years being 60%. There is a decline in the percentage of scores after the age of 50 years when after 55 years there is a sudden rise till 60 years after which the percentage of scores is continuously declining till about 40%. According to figure 2, it is indicated that the mental health scores are greatest in percentage between the age group of 45 to 50 years being 50%. There is then a decline of almost 10% till the age of 55 years and then again rise of almost 10% till the age of 60 years after which the percentage of scores is continuously declining till about 30%. According to figure 3, it is indicated that when the physical health score is between 20 to 30 % then the mental health score is approximately nearing 20% showing a slow increase in the scores of physical health. According to table 2, the one-sample T-test shows that both the physical and mental health components conditioned concerning age are statistically significant with a p-value < 0.001 indicating a significant impact on overall health comprising both the physical and mental aspects. According to table 3, a correlation between physical and mental health score percentage, physical health score percentage with age, and mental health score percentage with age are calculated using three correlation coefficients, 1) Pearson, 2) Spearman and 3) Kendall. According to figure 4, it is indicated that there is zero correlation between physical and mental health score percentages that is they are obtained independently concerning each other. According to figure 5, it is indicated that there is a zero correlation between physical health score percentage with age which means they are obtained independently concerning each other. According to figure 6, it is indicated that there is a negative correlation between mental health score percentage with age that means as the age is increasing in years the mental health score obtained is decreasing.

Discussion

This survey aimed to check the impact of covid-19 restrictions on overall health in postmenopausal Indian women. This study identified the health status of postmenopausal women during the pandemic. Health status was categorized under physical and mental health domains using the PROMIS10 scale. The results of the current study indicated that the overall health is significantly impacted in the face of covid-19 pandemic restrictions comprising both the physical and mental health aspects. Realizing the lack of information in Indian studies on women in their postmenopausal period it was important to conduct preliminary research in this area.

According to, Maugeri *et al*, it was proven that during the Covid-19 pandemic, physical activity levels among all the age groups were affected in Italy. The current study also shows that physical components of the PROMIS10 scale showed a significant decline in scores. According to Belgen *et al*, women who had exercise habits before the pandemic period had higher physical activity levels during the pandemic period. It can be thus interpreted that low levels of physical activity before the pandemic are a possible reason for low levels of physical activity during the pandemic in the current study. According to Hashemipoor *et al*, postmenopausal women show psychological traits of defectiveness/shame, isolationism, dependency, self-control, and approval-seeking behavior. The present study shows that the mental health score of the PROMIS10 scale is significantly affected.

Tavakol *et al* suggested that higher levels of physical activity help to reduce the severity of COVID-19 disease. Presently we have found physical health in postmenopausal women is significantly impacted with a p-value of < 0.001. According to Wilson *et al*, physical activity levels, especially in females were affected in the face of the Covid-19 pandemic which is in agreement with the findings of this study. Avis *et al* found that greater psychological well-being at an older age was associated with midlife in terms of less financial strain, greater physical activity, not smoking, better physical functioning, and fewer sleep problems hence these things are

likely to contribute to women participating in this study. Also, according to the author Chinese women had worse mental health scores as compared to whites thus geographical and racial variations are important factors to look for.

Coronado *et al* stated that During the Covid-19 confinement, postmenopausal women who participated in physical activity had a higher health-related quality of life and higher levels of resilience than the women who were using antidepressants. The author also reported that Health-related quality of life was better in women who lived with others, which can be a possible reason for women in the present study. Especially in the background of the pandemic, these women can live alone for most of the time due to lockdown at various places and difficulties of transport. Morardpour *et al* stated that reduced sitting time and exercise that is physical activity is recommended as a priority to improve the quality of life after menopause hence it is important to notice the increased sitting time at home due to covid-19 pandemic. Hami *et al* found that majority of the older adults fall into the inactive or sedentary group (73.8%) which is consistent with the findings of this study. More emphasis has to be placed on all aspects of health together comprising physical, mental, and social aspects daily in a postmenopausal women population.

Various studies found the decreased levels of physical activity in older adults especially women hence it is important to notice the responses giving the same impression even if it is a small-scale study. Awareness regarding this needs to be established in the Indian population. Along with that, postmenopausal women are at a higher risk of developing cardiovascular conditions in later lives after menopause thus they need to know the link of preventing themselves from such conditions by being physically active as concluded by Lamonte *et al*. Higher levels of recreational physical activity, including walking, are associated with significantly reduced heart failure risk in community-dwelling older women.

Limitations of the study

One of the limitations of the study was that the majority of the responders were from Maharashtra, Karnataka, Gujarat, and Rajasthan and hence are not truly representative of India. Another limitation was the smaller sample size since this was a preliminary level study.

Conclusion

After conducting the study, it was concluded that there was a significant impact of covid-19 restrictions on overall health comprising both physical health aspects as well as mental health aspects in postmenopausal Indian women with a p-value being <0.001.

Conflict of Interest

The authors declare that they have no conflict of interest.

Acknowledgment

Akshata Joglekar, designed and conducted the online survey and prepared the manuscript. Rishabh Pathak helped in the post-data analysis and interpretation of the data for the manuscript. Anjali Suresh helped to write the manuscript and guided me in conducting the entire study and queries related to the study.

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