Open Access

OBM Geriatrics

LIDSEN Publishing Inc.

Original Research

Health-Related Quality of Life (HRQoL) in Elderly Patients Attending at Tertiary Health Care Centre in Central India During 1st Wave of COVID-19 Pandemic: A Prospective Observational Study

Yogendra Keche [1, †, *], Preetam Wasnik [1, †], Keshao Nagpure [2, †], Nitin Gaikwad [1, †], Suryaprakash Dhaneria [1, †, ‡], Sabah Siddiqui [1, †], Apoorva Joshi [1, †]

1. All India Institute of Medical Sciences, GE Road Tatibandh, Raipur, India; E-Mails: drynkeche@aiimsraipur.edu.in; preetam9764@rediffmail.com; nitingaikwad2707@aiimsraipur.edu.in; drspdhaneria@rediffmail.com; dr.sabahsiddiqui@gmail.com; 94apoorva@gmail.com
2. All India Institute of Medical Sciences, Nagpur, India; E-Mail: kartikmed@rediffmail.com

‡ Current Affiliation: RD Gardi Medical College, Ujjain, Madhya Pradesh, India.

† These authors contributed equally to this work.

* **Correspondence:** Yogendra Keche; E-Mail: drynkeche@aiimsraipur.edu.in

Academic Editor: Pedro Morouco

Special Issue: COVID-19 Pandemic and Older Adults

OBM Geriatrics
2022, volume 6, issue 4
doi:10.21926/obm.geriatr.2204216

Received: August 22, 2022
Accepted: November 30, 2022
Published: December 11, 2022

Abstract

The COVID-19 pandemic had imposed a city-level quarantine, local lockdown, and border closures for patient-level isolation to control virus spread. There is a lack of studies on the health-related quality of life (HRQoL) in the elderly in countries like India during COVID-19. After obtaining written informed consent from the elderly patients, data was recorded in the case record form-cum-questionnaire. The quality of life was assessed with the help of Centers for disease control and prevention (CDC) HRQoL-14 measures, which are based on general health improvement, physical and mental health, and its effect on usual activities like self-

care, work, or play, sadness, depression, worry, tension, or anxiety, and rest or sleep. A total of 331 patients were screened and 234 were enrolled in this study, with 220 patients completing their follow-up. Among them, 55.43% were retired elderly, 31.82% were unemployed and 21.36% were living alone. After one month, 49 patients had days of poor physical health which was significantly below baseline (70 patients). More patients had poor mental health in the first 15 days as compared to the time of recruitment. At end of 1 month, self-care, work, and recreational activities were affected in 11 patients, with a significant reduction from baseline in 21 patients. Elderly patients felt sad and depressed and did not get enough sleep in the first 7 days and were worried, tense and anxious in the initial 15 days, which improved after 1 month. A significant number of patients had improved activity limitations because of the COVID-19 pandemic at the end of 1 month. The COVID-19 pandemic had made a significant impact on physical and mental health. A system of mental and psychological health support for the elderly during isolation should be developed. Engaging the elderly in cognitively stimulating mental exercises through apps, limiting exposure to social media, and setting up helplines for the elderly may be helpful in this regard.

Keywords
Quality of life in elderly; HRQoL elderly and COVID-19; activity limitation and quality of life; mental health and quality of life

1. Introduction

The elderly suffer from various diseases such as Alzheimer's disease, Parkinson's disease (PD), vascular dementia, stroke, visual impairment, cataracts and macular degeneration, atherosclerosis, coronary artery disease (CAD), heart failure, diabetes, arthritis, osteoporosis and fractures, cancer, and incontinence. Therefore, they need to be provided with additional medications for the therapy. In addition, there are age-related variations in response to some drugs, as well as shifts in drug use patterns owing to the development of newer drugs. The most significant change in the life of the elderly is the loss of a spouse. The objective of pharmacotherapy in the elderly is to enhance HRQoL and prolong life [1].

There is a correlation between the number of chronic illnesses suffered by the elderly and the costs associated with their healthcare [2, 3]. Older persons with multiple diseases have to visit healthcare facilities frequently. It has also been shown that older adults with multiple medical conditions are more likely to have severe symptoms such as pain, dry mouth, lack of energy, and difficulty sleeping, and adversely affect health-related quality of life (HRQoL) [4-7]. In particular, the high symptom burden, including pain, frequently results in a reduction in physical activity and function, which is inversely related to one's capacity to perform activities of daily living [8, 9]. Physical activity is one of the most important factors in enhancing the HRQoL in older adults and has been shown to promote healthy aging [10, 11]. Older persons who are more physically active have lower all-cause mortality and better muscle fitness than those who are less physically active [10]. As a result, increasing the amount of physical activity in older adults has become a global priority [10, 11]. Accurately determining the function of mental health in HRQoL has proven

challenging, despite the widespread agreement that it plays a key part in determining this function. Current research suggests that psychological factors like depression have an impact on many factors that affect HRQoL [12, 13].

With the worldwide outbreak of COVID-19, various measures have been taken by different countries in controlling the spread of the virus, ranging from city-level quarantine, local lockdowns, and border closures to patient-level isolation. Social distancing measures such as staying at home, use of masks, repeated hand washing, and closing restaurants, bars, and entertainment venues to avoid crowding have substantially reduced the spread of COVID-19 virus infection [14, 15]. These measures have also affected the economy, education as well as physical and mental health, and quality of life of the elderly and other populations [16-19]. Studies from the Western country like the United States of America and Asian countries like Bangladesh have shown that social distancing measures such as nationwide lockdowns and stay-at-home orders have been found to be associated with greater health risks, financial concerns, and loneliness which have been observed in all age groups including the elderly [20, 21]. The COVID-19 pandemic has negatively impacted everyone worldwide. However, this impact varies based on factors including the nation of residency, age, health, social support, and individual strength. There is increasing evidence that COVID-19 adversely affected the HRQoL in different age groups and occupations. However, most of these studies have been conducted in Western and developed countries [22, 23]. During and after COVID-19, there is a lack of research concentrating on HRQoL in older adults. The majority of the published research on HRQoL assessment after COVID-19 has concentrated on other groups, such as COVID-19 survivors [24], medical professionals [25], relatively young populations, and women [26]. Also, there is a lack of studies on the HRQoL in the elderly residing in low and low-middle-income countries (LMICs) like India in the context of COVID-19. As the period of this study was in the first wave of COVID-19, the HRQoL of the affected elderly patients in this study represented the effect of COVID-19 on the HRQoL of the elderly [27, 28]. Identifying and understanding of determinants of HRQoL in the elderly may help in designing appropriate policies for maintaining the HRQoL in the elderly in future pandemics, as new virus names emerge one after another, creating fears among the population.

2. Materials and Methods

2.1 Aim of the Study

To find out the effect on HRQoL of elderly patients attending a tertiary health care centre in central India during the first wave of COVID-19 at the end of one month.

2.2 Primary Objective

To find out the changes in the quality of life in elderly patients at a tertiary care centre in central India during the first wave of COVID-19 during recruitment visits and at one-month follow-up by HRQoL-14 measures of the Centre for Disease Control and Prevention (CDC) [29].

2.3 Secondary Objective

Identify the co-relation of quality of life with other factors.

2.4 Criteria for Inclusion

This study included male and female patients over the age of 65 who were attending the medicine Outpatient Department (OPD) and taking 2 or more drugs. Seriously ill patients who require hospitalization were excluded from this study.

2.5 Study Methodology

This is a longitudinal prospective observational study. Data for this study were collected after obtaining the Institute's ethics committee's approval. This study was carried out in medicine OPD for 16 months. The study method for this study is described as per the study registered with the clinical trial registry of India (CTRI/2020/01/022852) [27, 28]. Those patients who presented to medicine OPD and fulfilled the inclusion and exclusion criteria were recruited for the study. Informed written consent was obtained from each of the study participants. Information collected was recorded in the case record form cum questionnaire. The quality of life was assessed with the help of CDC's HRQoL-14 measures and based on overall general health improvement over one month period [29]. The parameters assessed were:

1. Physical and mental health days in the last 30 days
2. Effect of physical or mental health on usual activities, such as self-care, work, or recreation in the last 30 days
3. Effect of pain on usual activities such as self-care, work, or recreation in the last 30 days
4. The number of days you felt sadness, blue, or depression in the last 30 days
5. The number of days you felt worried, tense, or anxious in the last 30 days
6. The number of days without adequate rest or sleep in the last 30 days and problems associated with daily activities [24].

2.6 Sample Size and Statistical Analysis

Data from 220 elderly patients were analyzed. Data were expressed as numbers or proportions. Data from the recruitment visits and the one-month visit was analyzed by Fischer’s exact test and other statistical analyses were carried out by Microsoft Excel. Two-tailed $p < 0.05$ by Fisher's exact test was considered statistically significant.

This study was a human study and approved by Institute Ethics Committee and also registered with the clinical trial registry of India (CTRI/2020/01/022852) [27].

3. Results

A total of 331 patients were screened and 234 were enrolled in this study, of which 220 patients completed their follow-up. Of the 220 elderly patients, 62.73% were males and 37.27% were females, 55.43% were retired, 31.82% were unemployed, 21.36% lived alone for more than the last 15 years and 4 patients were unable to obtain medication because of restrictions of lockdown (Table 1). Hypertension was observed in 29% of the elderly. The other co-morbidities observed were chronic obstructive pulmonary disease (COPD), post-herpetic neuralgia, osteoarthritis, CAD, migraine, valvular heart disease, rheumatoid arthritis (RA), nephropathy, asthma, cerebrovascular accident (CVA), prostatomegaly, piles, hypothyroidism, ST-elevation myocardial infarction (STEMI) and stroke. 23(10.46%) elderly patients with hypertension presented with dyslipidemia (Table 2).

9.55% of elderly patients had diabetes only while 56.36% of elderly patients had both diabetes and hypertension, of which 23.64% had chronic kidney disease (CKD), CAD, myocardial infarction (MI), benign prostate hypertrophy (BPH), RA, psychosis with dementia, systemic lupus erythematosus (SLE), neuropathy, hypothyroidism, old CVA, heart failure, hemiparesis, varicose vein, dementia, asthma, sickle cell anemia, PD, COPD, fatty liver, cholelithiasis, osteoarthritis and lower urinary tract symptoms (LUTS) as additional complications (Table 2).

Table 1 Baseline characteristics of the recruited elderly patients.

S.No.	Demographic parameter	No. (%) of elderly patients
1.	Sex	
	Male	138 (62.73)
	Female	82 (37.73)
2.	Occupation	
	Unemployed	70 (31.82)
	Government service	3 (1.36)
	Private service	19 (8.64)
	Retired	122 (55.45)
	Any other	6 (2.73)
3.	Family history	
	Living with spouse	63 (28.64)
	Living alone for a longer period (15.65 ± 12.09 years)	47 (21.36)
4.	Dietary history	
	Adequate protein in the diet	192 (87.27)
	No adequate protein in the diet	28 (12.73)
5.	Medication History	
	Taking regular medications	210 (95.45)
	Reasons for not having regular medications	
	i. Not taking regular medications because of adverse events/new complaints	3 (42.86)
	ii. Non-availability of medication because of the COVID-19 pandemic	4 (57.14)

Table 2 Diagnoses of the elderly patients recruited in this study.

S.No.	Diagnoses	No.
1	Hypertension (HT)	64
	HT with other comorbidities except for diabetes mellitus (DM)	23
2	DM	21
3	HT with DM	124
	HT and DM with other comorbidities	52
Others		
4	Portal HT	2

5	Chorea	1
6	CAD/PD	1
7	Asthma	1
8	Spondylosis	2
9	Vertigo	1
10	Tuberculosis (TB)/COPD	1
11	Acute kidney injury (AKI)	1
12	Post coronary artery bypass graft (CABG)	1
13	RA	1

Apart from these, a few patients suffered from portal hypertension (HT), chorea, CAD/PD, asthma, spondylosis, vertigo, tuberculosis (TB)/COPD, acute kidney injury (AKI), post coronary artery bypass graft (CABG) and RA (Table 2).

After one month, overall health improved as most of the patients were taking regular medications. Compared to the baseline, 49 patients had significantly more days of poor physical health at the end of one month compared to 70 patients at baseline. There were more days of poor mental health days in the first 15 days as compared to recruitment. After one month, self-care, work, and recreation activities were affected in 11 patients compared to 21 patients at recruitment, which was a significant finding (Table 3).

Table 3 Healthy Days Core Module (4 points/questions): comparison of overall general health at recruitment and 1 month later.

Overall general health in 30 days	No of Patients	
Rating	At recruitment	After 1 month
a. Excellent to good	161	175
b. Fair	59	44
c. Poor	0	1
Physical health days in the last 30 days		
Days of poor physical health		
a. Number of days		
i. 0-7	39	32
ii. 8-15	24	12*
iii. 16-30	7	5
Total	70	49*
b. None	148	168*
c. Don’t know/Not sure	1	3
Mental health days in the last 30 days	No of Patients	
Days of poor mental health		
a. Number of days		
i. 0-7	10	12
ii. 8-15	16	22
iii. 16-30	17	11
Total	43	45

b. None	166	160
c. Don't know/Not sure	11	15
Effect of physical or mental health on usual activities, such as self-care, work, or recreation in the last 30 days		
Physical or mental health that limited usual activities, such as self-care, work, or recreation		
a. Number of days	Number of patients	
i. 0-7	4	4
ii. 8-15	8	2
iii. 16-30	9	5
Total	21	11*
b. None	198	208
c. Don't know/Not sure	11	15

*p < 0.05 by Fisher's exact test

Elderly patients felt sad, blue and depressed and did not get enough sleep in the first 7 days and worried, tense and anxious in the initial 15 days. These symptoms improved at the end of 1 month (Table 4).

Table 4 Heathy Days Symptom Module (5 points/questions): Comparison of healthy days at recruitment visit and 1 month follow up.

Effect of pain on usual activities, such as self-care, work, or recreation in the last 30 days		
Pain limited usual activities, such as self-care, work, or recreation	At recruitment	After 1 month
a. Number of days	Number of patients	
i. 0-7	3	3
ii. 8-15	4	2
iii. 16-30	10	8
Total	17	13
b. None	200	207
c. Don't know/Not sure	1	0
The number of days that felt sad, blue, or depressed in the last 30 days		
a. Number of days		
i. 0-7	6	13
ii. 8-15	20	18
iii. 16-30	9	4
Total	35	35
b. None	162	160
c. Don't know/Not sure	1	0
The number of days that felt worried, tense, or anxious in the last 30 days		
Number of Days	Number of patients	
0-7	9	16
8-15	17	22
16-30	18	13

Total	44	51
a. None	161	153
b. Don't know/Not sure	15	16
The number of days without adequate rest or sleep in the last 30 days		
Number of days	Number of patients	
i. 0-7	14	21
ii. 8-15	6	4
iii. 16-30	22	20
Total	42	45
a. None	165	173
b. Don't know/Not sure	3	2

*p < 0.05 by Fisher's exact test

Activity limitation because of any health problem (COVID-19 pandemic) improved significantly after 1 month, while it was limited at the time of recruitment. There was no significant improvement in other points in the activity limitation module (Table 5).

Table 5 Activity Limitation Module (5 points/questions): Comparison of activity limitation at recruitment visit and follow-up at 1 month.

S.No.	Activity Limitation Module	Number of patients	
		At recruitment	After 1 month
1.	Any activity that was limited because of any impairment or health problem	113	80*
2.	Need others to help with personal care needs, such as eating, bathing, dressing, or getting around the house because of health problem	6	9
3.	Need help from others with routine needs, such as everyday household chores, doing necessary business, shopping, or getting around for other purposes	89	77
4.	Period of activities restriction because of major impairment or health problem		
	Days	3	3
	Weeks	8	4
	Months	47	34
	Years	52	38
5.	Major impairment or health problem that limits activities		
	Arthritis/rheumatism	21	18
	Back or neck problem	42	43
	Fractures, bone/joint injury	8	4
	Walking problem	99	95
	Lung/breathing problem	24	18

Hearing problem	39	38
Eye/vision problem	46	42
Heart problem	21	19
Hypertension/high blood pressure	178	181
Diabetes	139	139
Cancer	-	-
Depression/anxiety/emotional problem	37	33
Other impairments/problems	45	41

*$p < 0.05$ by Fisher's exact test

4. Discussion

The factors significantly differentiated the average level of HRQoL were gender, place of residence, education, employment status, absence of a spouse, chronic disorders, smoking, and physical activity [30, 31]. The COVID-19 pandemic had a negative worldwide effect on everyone. In a review, the effect of COVID-19 on HRQoL was observed to be greater in patients with acute COVID-19 (confirmed or suspected) than in those with long-term COVID-19. However, numerous other characteristics, including age, comorbidity, and the severity of the patient's illnesses, had an influence on HRQoL and the impact of COVID-19 did not significantly diminish even after two months. Additionally, this analysis also found that patients from LMICs had a significantly less negative impact on HRQoL due to COVID-19 than patients from high-income countries (HICs), such as the UK and Norway. And the HRQoL scores were also lower in female COVID-19 patients and elderly patients [32].

In an online assessment of the quality of life in a multi-country survey, the factors that were found to significantly affect physical and mental health were age, country of residence, marital status, employment and ability to pay household bills, health insurance, frequency of family members visiting the elderly population and social, family and mental support to the elderly during the COVID-19 pandemic. The results of the study also suggested that the younger population (future elderly) should take many factors into account when they are young so that their quality of life should not be comprised in old age in a situation like the COVID-19 pandemic. There is a definite role in providing physical, emotional, and psychological support to the elderly who might have pre-existing physical and mental health issues due to aging [33].

Data results from this and other referred studies can be used for healthcare planning strategies to address quality of life during COVID-19 and future pandemics [21].

In this study, it was observed that only 13% of the elderly were doing some work and around 21% had been living alone for around 15 years (Table 1). Married and better-educated individuals reported much lower levels of perceived stress compared to single/divorced people and those with lower levels of education [21]. In a similar vein, subjective stress was greater in families with lower incomes [21].

In this present study, the number of patients with limited activity was significantly greater at the recruitment visit, which gradually improved at the 1-month follow-up as COVID-19 activity restriction eased. A study conducted by Marzo RR et al. noted that being confined to one's house and decreased physical activity could increase stress and negatively impact the quality of life of the elderly. They also observed that regular family visits and social support had a favourable influence

on older people's quality of life [33]. We had offered telephone support and medication assistance to the elderly in our study who were stuck in their hometown and could not visit OPD because of the nationwide lockdown and lack of adequate transport facilities or were afraid/not permitted to go outside. We also followed up with patients by phone with the permission of the Institute's ethics committee.

The elderly people are already less mobile and physically active than the younger ones and should pay more attention to activity and mobility. Physical exercise offers several advantages for both physical and mental health. Physically active individuals have been shown to have higher HRQoL and lower stress levels. Regular exercise also enhances the body's defence against infection in addition to having several positive effects on physical and mental health. Unfortunately, amid the pandemic lockdown and stay-at-home restrictions, levels of movement and physical activity have decreased. This is especially concerning for the elderly who, for a variety of reasons, were often inactive and immobile even before the epidemic, necessitating home-based exercise intervention studies to improve physical activity participation and mental health among older adults during and after the COVID-19 pandemic [21]. People confined to their homes because of the epidemic spent more time online and on social media, which further decreased levels of physical activity. Regular exercise, especially in the elderly, will preserve both their physical and mental health.

In this study, physical health days and mental health days were not good in the initial 15 days and usual activities like self-care, work, and recreation n were compromised in a significant number of patients during the one-month follow-up as compared to recruitment due to poor physical and mental health (Table 3). Similarly, during the first 15 days of the study period, a greater number of patients experienced feelings of sadness, depression, and frustration, as well as tension, worry, and anxiety (Table 4). These parameters had shown no difference at the 1-month follow-up (Table 4). The limitations associated with the COVID-19 pandemic led to varied results in the healthy day symptoms model, although improvements in other modules were observed at the 1-month follow-up, suggesting that the COVID-19 pandemic had a significant impact on the physical and mental health of the elderly patient. Sepúlveda-Loyola W et al. reported the main mental and physical outcomes were anxiety, depression, poor sleep quality and physical inactivity during the isolation period, which are the same as those found in our study [34]. For combating the COVID-19 pandemic's effects on older people's mental and physical health, we recommend that they continue to engage in any kind of physical activity and maintain a regular sleep-wake cycle. Authors also suggested support systems for the elderly's mental and psychological health during times of isolation like engaging them in cognitive stimulation (through apps or stimulating mental exercises, especially for those with prior cognitive impairments), staying in touch with loved ones, limiting exposure to social media, and setting up helplines for the elderly [34]. In a study conducted during the COVID-19 lockdown in Spain, unexpectedly, the 18-25 age group had greater mean levels of stress, anxiety, and depression, followed by the 26-60 age group, while the 61+ age group had the lowest mean levels of symptoms across the three dimensions. High levels of stress, anxiety, and depression were co-related with the additional stress experienced by young students when they need to adapt to the new online educational environment, without face-to-face classes [35].

Governments and people's budgets have suffered as a result of COVID-19. While the younger generation can sustain themselves via a variety of activities, it may be difficult for the elderly to do so during the current crisis. In the study of Marzzo et al., those who had jobs and those who have enough money to cover their expenses reported a higher quality of life [33]. Few patients in this

study could not get their regular medication because of COVID-19 pandemic-related restrictions and nationwide lockdown.

4.1 Strength of the Study

This was a follow-up study that can provide medical advice regarding medications and moral support to the elderly during the COVID-19 pandemic periods. Though telephonic follow-up was done with some patients, all of these patients happily answered the CDC HRQoL as they received some sort of support through our follow-up telephonic calls.

4.2 Limitations of the Study

Telephonic follow-up was carried out in some patients with the prior permission of the Institute Ethics Committee as nationwide lockdown and COVID-19 restrictions. Physical activity is one of the important factors associated with the improvement in HRQoL, but this factor was more influenced because of COVID-19 restrictions and lockdown, so as the restrictions were relaxed, improvement in this particular parameter is observed, which led to the varied results in this study. Male predominance is also a limitation of this study as factors affecting HRQoL differ in both populations and females may get lower HRQoL scores as seen in previous studies.

5. Conclusions

HRQoL depends on various factors like comorbidities, mental status and physical activity. In this study, a significant number of elderly patients had their self-care, work, and recreation affected. Also, a greater number of elderly patients felt sad, blue, depressed, worried, anxious tense in the initial days of the first wave of COVID-19. The COVID-19 pandemic-related restrictions led to varied results in the Healthy Days symptom model, despite observed improvement in other modules at the 1-month follow-up, hence, the COVID-19 pandemic also had made a significant impact on the physical and mental health of elderly patients in India. Physical activity had beneficial effects on both physical and mental health, as both improved mobility with relaxation in the restriction during the COVID-19 pandemic.

Acknowledgments

We highly thankful to Dr Jasketan Meher, Dr Pranita, Dr, Pankaj Kannuje and Dr Gevesh Devangan for helping us for the patient recruitment for this study.

Author Contributions

Conceptualization, Data curation & Funding acquisition-YK, SPD; Investigation, Methodology, Project administration & Supervision: YK, SS, PW, KN and AJ; Writing – original draft-YK, PW, KN, SPD; Writing – review & editing – YK, NG, SPD, PW, KN and SS.

Funding

INR 274600.00 had been sanctioned for this project by order No. 22/41/2019/admins/1605, dated 14th November 2019 by All India Institute of Medical Sciences, Raipur.

Competing Interests

The authors have declared that no competing interests exist.

References

1. Katzung BG. Special aspects of geriatric pharmacology. In: Basic & Clinical Pharmacology. Chennai: Mc Graw Hill; 2017.
2. Wolff JL, Starfield B, Anderson G. Prevalence, expenditures, and complications of multiple chronic conditions in the elderly. Arch Intern Med. 2002; 162: 2269-2276.
3. Lehnert T, Heider D, Leicht H, Heinrich S, Corrieri S, Luppa M, et al. Health care utilization and costs of elderly persons with multiple chronic conditions. Med Care Res Rev. 2011; 68: 387-420.
4. Pisu M, Azuero A, Halilova KI, Williams CP, Kenzik KM, Kvale EA, et al. Most impactful factors on the health-related quality of life of a geriatric population with cancer. Cancer. 2018; 124: 596-605.
5. Walke LM, Byers AL, Gallo WT, Endrass J, Fried TR. The association of symptoms with health outcomes in chronically ill adults. J Pain Symptom Manage. 2007; 33: 58-66.
6. Zambroski CH, Moser DK, Bhat G, Ziegler C. Impact of symptom prevalence and symtom burden on quality of life in patients with heart failure. Eur J Cardiovasc Nurs. 2005; 4: 198-206.
7. Eckerblad J, Theander K, Ekdahl A, Unosson M, Wirehn AB, Milberg A, et al. Symptom burden in community-dwelling older people with multimorbidity: A cross-sectional study. BMC Geriatr. 2015; 15: 1.
8. Vaughan L, Leng X, La Monte MJ, Tindle HA, Cochrane BB, Shumaker SA. Functional independence in late-life: Maintaining physical functioning in older adulthood predicts daily life function after age 80. J Gerontol A. 2016; 71: S79-S86.
9. Molton IR, Terrill AL. Overview of persistent pain in older adults. Am Psychol. 2014; 69: 197-207.
10. World Health Organisation. Global recommendations on physical activity for health. Geneva: World Health Organisation; 2010.
11. Paterson DH, Jones GR, Rice CL. Ageing and physical activity: Evidence to develop exercise recommendations for older adults. Appl Physiol Nutr Metab. 2007; 32: S69-S108.
12. Lin JH, Huang MW, Wang DW, Chen YM, Lin CS, Tang YJ, et al. Late-life depression and quality of life in a geriatric evaluation and management unit: An exploratory study. BMC Geriatr. 2014; 14: 77.
13. Chang-Quan H, Xue-Mei Z, Bi-Rong D, Zhen-Chan L, Ji-Rong Y, Qing-Xiu L. Health status and risk for depression among the elderly: A meta-analysis of published literature. Age Ageing. 2009; 39: 23-30.
14. Courtemanche C, Garuccio J, Le A, Pinkston J, Yelowitz A. Strong social distancing measures in The United States reduced the COVID-19 growth rate. Health Aff. 2020; 39: 1237-1246.
15. Qian M, Jiang J. COVID-19 and social distancing. J Public Health Res. 2022; 30: 259-261.
16. de Matos DG, Aidar FJ, Almeida-Neto PFd, Moreira OC, Souza RFd, Marçal AC, et al. The impact of measures recommended by the government to limit the spread of coronavirus (COVID-19) on physical activity levels, quality of life, and mental health of Brazilians. Sustainability. 2020; 12: 9072.

17. Samrah SM, Al-Mistarehi AH, Aleshawi AJ, Khasawneh AG, Momany SM, Momany BS, et al. Depression and coping among COVID-19-infected individuals after 10 days of mandatory in-hospital quarantine, Irbid, Jordan. Psychol Res Behav Manag. 2020; 13: 823.
18. Nguyen HC, Nguyen MH, Do BN, Tran CQ, Nguyen TT, Pham KM, et al. People with suspected COVID-19 symptoms were more likely depressed and had lower health-related quality of life: The potential benefit of health literacy. J Clin Med. 2020; 9: 965.
19. Tran BX, Nguyen HT, Le HT, Latkin CA, Pham HQ, Vu LG, et al. Impact of COVID-19 on economic well-being and quality of life of the Vietnamese during the national social distancing. Front Psychol. 2020; 11: 565153.
20. Tull MT, Edmonds KA, Scamaldo KM, Richmond JR, Rose JP, Gratz KL. Psychological outcomes associated with stay-at-home orders and the perceived impact of COVID-19 on daily life. Psychiatry Res. 2020; 289: 113098.
21. Qi M, Li P, Moyle W, Weeks B, Jones C. Physical activity, health-related quality of life, and stress among the Chinese adult population during the COVID-19 pandemic. Int J Environ Res Public Health. 2020; 17: 6494.
22. Cleaton N, Raizada S, Barkham N, Venkatachalam S, Sheeran T, Adizie T, et al. COVID-19 prevalence and the impact on quality of life from stringent social distancing in a Single Large UK Rheumatology Centre. Ann Rheum Dis. 2021; 80: e93.
23. Ferreira LN, Pereira LN, da Fé Brás M, Ilchuk K. Quality of life under the COVID-19 quarantine. Qual Life Res. 2021; 30: 1389-1405.
24. Dorri M, Bazargany MH, Khodaparast Z, et al. Psychological problems and reduced health-related quality of life in the COVID-19 survivors. J Affect Disord Rep. 2021; 6: 100248.
25. Suryavanshi N, Kadam A, Dhumal G, Nimkar S, Mave V, Gupta A, et al. Mental health and quality of life among healthcare professionals during the COVID-19 pandemic in India. Brain Behav. 2020; 10: e01837.
26. Schiavi MC, Spina V, Zullo MA, Colagiovanni V, Luffarelli P, Rago R, et al. Love in the time of COVID-19: Sexual function and quality of life analysis during the social distancing measures in a group of Italian reproductive-age women. J Sex Med. 2020; 17: 1407-1413.
27. Usefulness of STOPP/START criteria and beers criteria for prescribing in geriatric patients in a tertiary heath care Center, Raipur, Central India [Internet]. 2022. Available from: http://www.ctri.nic.in/Clinicaltrials/showallp.php?mid1=39486&EncHid=&userName=STOPP/START%20Criteria.
28. Keche YN, Gaikwad NR, Wasnik PN, Siddiqui S, Nagpure K, Dhaneria S. Usefulness of STOPP/START criteria and beers criteria for prescribing in geriatric patients in a tertiary heath care center, Raipur, Central India. J Fam Med Prim Care. 2022.
29. CDC HRQOL – 14. Healthy days core module [Internet]. 2022. Available from: https://www.cdc.gov/hrqol/hrqol14_measure.htm.
30. Singh A, Palaniyandi S, Palaniyandi A, Gupta V. Health related quality of life among rural elderly using WHOQOL-BREF in the most backward district of India. J Fam Med Prim Care. 2022; 11: 1162-1168.
31. Krawczyk-Suszek M, Kleinrok A. Health-related quality of life (HRQoL) of people over 65 years of age. Int J Environ Res Public Health. 2022; 19: 625.
32. Poudel AN, Zhu S, Cooper N, Roderick P, Alwan N, Tarrant C, et al. Impact of Covid-19 on health-related quality of life of patients: A structured review. PLoS One. 2021; 16: e0259164.

33. Marzo RR, Khanal P, Ahmad A, Rathore FA, Chauhan S, Singh A, et al. Quality of life of the elderly during the COVID-19 pandemic in Asian countries: A cross-sectional study across six countries. Life. 2022; 12: 365.
34. Sepúlveda-Loyola W, Rodríguez-Sánchez I, Pérez-Rodríguez P, Ganz F, Torralba R, Oliveira DV, et al. Impact of social isolation due to COVID-19 on health in older people: Mental and physical effects and recommendations. J Nutr Health Aging. 2020; 24: 938-947.
35. Ozamiz-Etxebarria N, Dosil-Santamaria M, Picaza-Gorrochategui M, Idoiaga-Mondragon N. Niveles de estrés, ansiedad y depresión en la primera fase del brote del COVID-19 en una muestra recogida en el norte de España. Cad Saúde Pública. 2020; 36. doi: 10.1590/0102-311X00054020.