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Impact of the COVID 19 pandemic on the mental health and quality of life among older adults in India

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ABSTRACT

Introduction: The Coronavirus disease 2019 (COVID-19) pandemic rapidly spread across continents causing widespread mortality. Older adults, especially those with underlying diseases, are more susceptible for COVID-19 infection. Due to this concern, reverse quarantine was adopted as a protective strategy. This can lead to several psychological and physical detrimental effects.
Aims: 1). To assess the mental health status (depression and anxiety) among elderly people in the community during the COVID-19 pandemic.2) To assess the impact of COVID-19 pandemic restrictions and mental health issues on quality of life.
Materials and Methods: This is a descriptive cross-sectional study among older adults (>60 yrs) residing in urban community in Central Kerala, India.
Results: Of the 200 patients, more than half had moderate to high levels of anxiety and a poor social support. Depression was seen in only 1/4th of patients and that was significant in older women. Mean knowledge about COVID was below 80%. Social support was inversely associated with anxiety and depression. Anxiety and depression significantly affected QOL scores.
Conclusion: This study emphasizes on the need for better mental health programmes tailored for our geriatric population. Joint multidisciplinary action plans with focus on enhancing social support can improve the quality of life of this vulnerable group.

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1. Introduction

The world is still reeling under the disastrous effects of the COVID -19. Since the discovery of the first infected case in Wuhan, China,[1] in December 2019,COVID-19 has spread throughout the world, causing an unprecedented public health crisis. Although COVID-19 affects all ages, individuals having comorbidities; immunocompromised and elderly people are affected more severely, and exhibit a higher mortality rate.[2] Age-related diminishing physiological function of the respiratory system, resulting impaired mucociliary clearance of foreign particles or micro-organisms, predisposes this subgroup to infections.[3] Old age has also been associated with weakened innate/adaptive immune defences. Other risk factors include poor nutrition, dementia, dehydration, and various clinical complications, especially in frail and bedridden patients.[4]

India reported its first COVID-19 case on 30 January 2020 from Kerala[5] and ever since the numbers have increased daily. The states which were worst affected

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in India included Maharashtra, Gujarat, Delhi, Rajasthan, Tamil Nadu, Madhya Pradesh and Uttar Pradesh. However, by September 2020, cases seem to be on a decline after August, with India recording the highest number of recoveries in the world.[6]

As the cases in India started to surge, effective measures were taken to prevent this spread. On 25 March 2020, India went into a nationwide lockdown for 21 days, which was later extended to May 3, 2020 and effectively sealed all its state and international borders. This preventive and emergency strategy, implies that only essential services like hospitals, police stations, emergency services like fire station, petrol pumps, and groceries are permitted. All other services, including all educational institutions, travel are completely shut down. This had proved effective on other parts of the world in curbing the spread of the coronavirus.[7]

This lockdown helped the government to prepare itself for the spike in infection rate. Faced with unique challenges, such as a huge population of 1.35 billion, socioeconomic inequalities and health disparities, this judicious move was applauded. Given the predilection of Covid 19 to cause fatal outcome in the elderly, the Kerala Govt advocated the 'reverse quarantine' model to protect its vulnerable senior citizens. Under the 'reverse quarantine', people having underlying medical conditions, especially those above 65 years and persons who are immunocompromised were segregated from other family members. This was implemented through family members and local bodies which are tasked with providing medicine, food, counselling and other assistance to those who are set to undergo this exercise for their safety.[8]

Although this seemed to be an effective strategy to combat the spread of the SARS – COV2 infection, the restricted movement can impact the psychological state of the public. Restricting free movement can result in anger, frustration, loneliness and depressive symptoms. There can be fear and apprehension due to the inability to procure medicines or visit their regular practitioner and concern of the course of their existing co morbidity. Non availability of basic groceries due to imposed lockdown can generate panic among the public and can lead to hoarding of basic supplies at households.[9]

Those elderly living within the traditional joint family system can avail themselves of the support of other family members. However, with more than one person from each household traveling to distant places for jobs[10] this can potentially increase the risk of spread of the disease to homes.

With most of their children are likely to have settled abroad or in another city,[11] those living in apartment complexes, depend on the services of a domestic aide, for their household chores. A few, in addition, are dependent on the assistance of a home- nurse to help them with their ADLs (Activities of Daily living). The possibility of cross infection through the visiting home help could also create a constant fear in the minds of the elderly.

Unlike the other states in India, the older population proportion is the highest in Kerala.[12] Dubbed as the 'most literate state' in the country[13] the majority are well aware of the events surrounding them. Knowledge of the disease, method of aerosol spread and risks of travel are likely to increase anxiety among the elderly, especially those who cannot abstain from going outside the safety of their homes.[14] The constant barrage of television and other social media reports of the numbers affected and dying daily due to COVID could increase the dread and despair.[15]

Although studies have examined the morbidity, mortality and pathogenesis of COVID 19 in the elderly, few studies have explored the effects of the pandemic on the mental health of people in India. We examined the effect of the COVID 19 on the mental health of older people and analysed the factors that were associated with increased anxiety, depression and poor quality of life, among older people in an urban population in central Kerala, India.

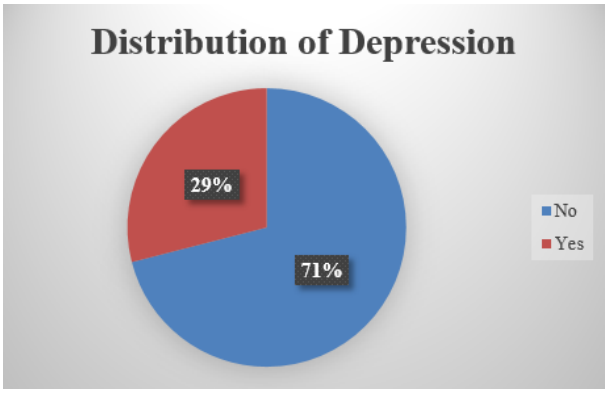

Fig. 1: Distribution of depression

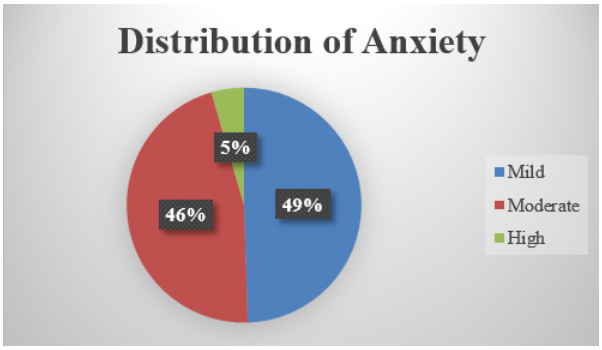

Fig. 2: Distribution of anxiety

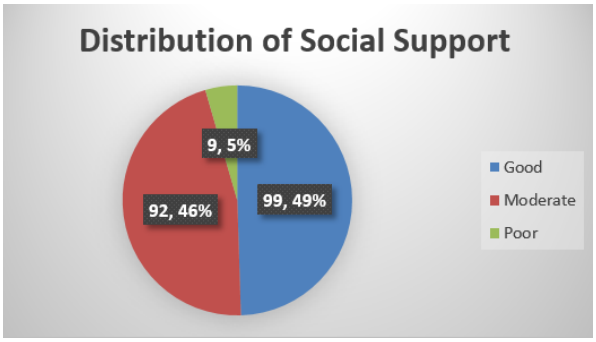

Fig. 3: Distribution of social support

2. Materials and Methods

2.1. Participants and procedure

A survey was done among 200 older people residing in an urban community in central Kerala. The sample size was estimated with 10% relative allowable error at 171 and was based on a study that assessed the effects of the pandemic on social life.[16] The survey included questions on their socio demographic profile, their living arrangement, lifestyle, accommodation type, knowledge of COVID 19, details of their medical comorbidities and their psychological status. Hospitalized patients, and those who suffered from acute illness, including COVID 19 infection were not included. Cognitively impaired patients were excluded, if a reliable informant was not available, and so were those who suffered from pre-existing mental illness and already on anxiolytics or antidepressants.

The data was collected after obtaining consent, using self-administered questionnaires and through google forms, as traveling during the pandemic time had been restricted. The study duration was 1 month, between 15 November 2020 to 31 December 2020, and was approved by the institutional Ethical committee.

2.2. Measures

Sociodemographic characteristics and details of medical comorbidities were obtained by direct interview. Functional activity was assessed using the KATZ score for ADL. (Activity of Daily Living).[17] IADL (Instruments of ADL) assessment using Lawton score.[18] Knowledge about COVID 19 pandemic among the general public was assessed using a pre validated survey tool for assessment of knowledge on COVID 19 among Indian residents.[19]

Social support was assessed using the Lubben Social network Scale (LSNS-6).[20] This is constructed from a set of three questions that evaluate kinship ties and a comparable set of three questions that evaluate non kin ties. The items that deal with kinship include the following: How many relatives do you see or hear from at least once a month? How many relatives do you feel close to such that you could call on them for help? How many relatives do you feel at ease with that you can talk about private matters? These three items are repeated with respect to non-kin ties by replacing the word relatives with the word friends. The total scale score is an equally weighted sum of the six items, with scores ranging from 0 to 30. Anxiety of the participants was assessed using the PSS-10 (Perceived stress scale).

The PSS, in 14, 10, and 4-item versions, has been frequently used across various cultures and populations and translated into many languages. The shorter PSS-10 consists of 6 positively (items 1, 2, 3, 6, 9 and 10: Positive factor) and 4 negatively (items 4, 5, 7 and 8: Negative factor) worded items. Negative worded items were re-coded during analysis. Total scores range from 0 to 40, with higher scores indicating higher levels of perceived stress.[21]

Geriatric Depression score – 4 (GDS-4) was used to screen for depression. The shortened form consists of four structured questions to detect major depression.[22] Scores less than one indicate no depression and scores more than one- likely to be depressed.

Quality of life was assessed using WHOQOL-BREF.[23] This is a self-administered questionnaire comprising 26 questions on the individual's perceptions of their health and well-being over the previous two weeks.[24] Responses to questions are on a 1-5 Likert scale where 1 represents "disagree" or "not at all" and 5 represents "completely agree" or "extremely".

The WHOQOL-BREF covers four domains each with specific facets: Domain 1 deals with the facets of physical health, that includes activities of daily living, dependence on medicinal substances and medical aids, energy and fatigue, mobility, pain and discomfort, sleep and rest and work capacity. Domain 2 covers the psychological aspects, particularly bodily image and appearance, feelings and self-esteem, spirituality / religion / personal beliefs, thinking, learning, memory and concentration. Domain 3 covers the social relationships, namely personal relationships, social support and sexual activity. Domain 4 focuses on the environment, that includes financial resources, freedom, physical safety and security, health and social care: accessibility and quality, home environment, opportunities for acquiring new information and skills, participation in and opportunities for recreation / leisure activities, physical environment and transport. There are also two separate questions which ask specifically about 1) the individual's overall perception of their health and 2) the individual's overall perception of their quality of life.

3. Statistical Analysis

Data was assessed using the IBM SPSS v 20. Descriptive analyses were used to estimate the participant's socio demographic characteristics, accommodation type, lifestyle – pre and post lockdown, details of their comorbidities, medication use and functional activity. In assessing

Table 1: Factors associated with anxiety

Variables	Anxiety				Total	p Value
	Low		Moderate + High			
	n=99	%	n=101	%		
Men	56	54.4	47	45.6	103	0.15
Women	43	44.3	54	55.7	97	
Employed	34	60.7	22	39.3	56	0.02
Unemployed	54	42.9	72	57.1	126	
Living in a house / independent	80	46.5	92	53.5	172	0.03
Living in an apartment	19	67.9	9	32.1	28	
Living alone	5	62.5	3	37.5	8	<0.001
Living with spouse	62	68.1	29	31.9	91	
Living with children / other family	32	31.7	69	68.3	101	
Needs help for bathing	1	20	4	80	5	0.37
Needs help for dressing	1	20	4	80	5	0.37
Needs help for toileting	1	16.7	5	83.3	6	0.22
Needs help for transferring	1	16.7	5	83.3	6	0.22
Occasional incontinence	1	20	4	80	5	0.18
Needs help with telephone	1	20	4	80	5	0.37
Needs help with transport	14	34.1	27	65.9	41	0.02
Needs help with medication	1	11.1	8	88.9	9	0.04
Needs help with finance	4	22.2	14	77.8	18	0.01
Needs help with shopping	28	45.2	34	54.8	62	0.41
Needs help with preparing Meals	29	43.9	37	56.1	66	0.27
Needs help with housekeeping	29	43.9	37	56.1	66	0.27
Needs help with laundry	35	46.1	41	53.9	76	0.44
Good knowledge of COVID	69	51.5	65	48.5	134	0.42
Poor knowledge of COVID	30	45.5	36	66	54.5	
Hypertension	47	52.2	43	47.8	90	0.48
Arthritis	6	31.6	13	68.4	19	0.10
Diabetes	30	45.5	36	54.4	66	0.42
Respiratory Illness	2	18.2	9	81.8	11	0.03
Eye Disorders	7	24.1	22	75.9	29	0.00
Heart Disease	8	42.1	11	57.9	19	0.49
Others	32	50	32	50	64	0.92
Good social support	22	66.7	11	33.3	33	
Moderate social support	40	64.5	22	35.5	62	<0.001
Poor social support	37	35.2	68	64.8	105	

Knowledge of Covid, Anxiety and depression scores, social support scale and QOL scores, numerical variables were expressed as mean ± standard deviation and category variable were expressed in frequency and percentage. Associations between living arrangement, accommodation type, knowledge, anxiety, depression social support and quality of life was assessed using the Pearson's chi square test.

4. Results

4.1. Characteristics of the participants (Table 1)

The study population mainly comprised of the young-old category. (n=155, 77.5%). More than $2/3^{rd}$ of the study population were graduates (135, 67.5%) and of the rest, a good number (53, 26.5%) had received more than 10 years of education. There was a sociodemographic divide, with the greater part living with their family (101, 50.5%) and in independent villas / houses (172, 86%). With regard to the employment status, only less than third of the total (56, 28%) continued to work. Data were missing in 9 participants.

Nearly all were (97%) were able to perform all their ADLs independently. In regard to the IADLs, the majority were able to manage a telephone and take their medications independently, (97.5% and 95.5% respectively), fewer people were able to prepare a meal or engage in housekeeping tasks (67%) or shop for themselves (69%). Hypertension and Diabetes were the most common comorbidities (90, 45% and 66, 33%, respectively) and most of the participants consumed less than 5 medications a day (157, 78.5%).

Table 2: Factors associated with depression

Variables	Depression				Total	p Value
	Yes		No			
	n=58	%	n=142	%		
Men	83	80.6	20	19.4	103	0.00
Women	59	60.8	38	39.2	97	
Employed	10	17.9	46	82.1	56	0.01
Unemployed	44	65.1	82	34.9	126	
Living in a house / independent	52	89.7	120	84.5	172	0.34
Living in an apartment	6	10.3	22	15.5	28	
Living alone	4	50	4	50	8	<0.001
Living with spouse	17	18.6	74	81.4	91	
Living with children / other family	37	36.6	64	63.4	101	
Needs help for bathing	2	40	3	60	5	0.96
Needs help for dressing	2	40	3	60	5	0.96
Needs help for toileting	3	50	3	50	6	0.48
Needs help for transferring	3	50	3	50	6	0.48
Occasional incontinence	2	40	3	60	5	0.96
Needs help with telephone	3	60	2	40	5	0.29
Needs help with transport	18	43.9	23	56.1	41	0.01
Needs help with medication	5	55.5	4	44.6	9	0.07
Needs help with finance	9	50	9	50	18	0.04
Needs help with shopping	22	35.4	40	64.6	62	0.17
Needs help with preparing Meals	21	31.8	45	68.2	66	0.53
Needs help with housekeeping	21	31.8	45	68.2	66	0.53
Needs help with laundry	26	34.2	50	65.8	76	0.20
Good Knowledge of COVID	91	67.9	43	32.1	134	0.17
Poor knowledge of COVID	51	77.3	15	22.7	66	
Hypertension	32	35.5	58	64.5	90	0.06
Arthritis	8	42.1	11	57.9	19	0.18
Diabetes	18	27.2	48	72.8	66	0.70
Respiratory Illness	3	27.2	8	72.8	11	1.0
Eye Disorders	13	44.8	16	55.2	29	0.04
Heart Disease	9	47.3	10	52.7	19	0.06
Others	24	37.5	40	62.5	64	0.06
Good social support	26	78.8	7	21.2	33	0.02
Moderate social support	50	80.6	12	19.4	62	
Poor social support	66	62.9	39	37.1	105	

4.2. Knowledge of COVID, social supports, mental health and QOL (Figures 1, 2 and 3)

The mean knowledge score of the study population was slightly less than 80% (7.8 ± 1.5). The majority (105, 52%), had less than adequate social support. In general, the mean PSS score was 14.06, suggestive of a moderate level of anxiety. More than half of the total participants, had moderate to high anxiety levels on the PSS score. Depression was seen only in 29% of the total.

QOL scores were low in the psychological domain followed by the physical and social domain (12.96 ± 1.59, 15.18 ± 3.10 and 15.55 ± 3.62 respectively). The mean QOL score was slightly above average.

4.3. Associations (Table 2)

Both anxiety and depression were significantly associated with an unemployed state (p=0.02), (p=0.01) respectively and the living arrangement (p <0.001). Those who lived alone were more depressed (50%, p=0.01) and those who lived with their children and family (68.3%, p=0.000) more anxious. Anxiety was also associated with living in independent houses/ villas (p=0.03). Depression was significantly higher in older women (p=0.00), who also had seemingly higher anxiety scores (p=0.10).

Poor mental health status was also associated with difficulty in performing IADLs. Anxiety scores and depression were higher in those who were dependent on transportation (p=0.02), (p=0.01) money management (p=0.01) (p= 0.04) and medication use (p=0.01) (p=0.08) respectively. Dependence for basic ADLs had no statistical

association with mental health.

Regarding comorbid illnesses, both anxiety and depression were higher in those who suffered from eye disorders (p=0.00), (p=0.03). Anxiety was also more in those with respiratory disorders (p=0.03), whereas depression in those with hypertension (p=0.04). Depression and anxiety were prominent in those that consumed lesser medicines. (p=0.01), (p=0.11). Knowledge of the disease did not seem to have any bearing on the mental health of the participants, (p= 0.17, r= -0.09) and (p=0.113, χ^2 = 1.882)

Social support was inversely associated with both anxiety and depression. (p=0.00) (r = -0.303) and (p=0.02). (χ^2= 7.155). Nearly 2/3rds of those depressed, (67.2%) belonged to the low social support category.

QOL scores negatively correlated with anxiety scores, particularly in the physical (r=-0.595, p= 0.000), social (r= — 0.610, p= 0.000) and environmental (r=- 0.597, p= 0.000) domains. QOL scores were significantly lower in those with depression in these same domains (13.15 ± 2.74) (p= 0.000), (13.20 ± 3.48) (p= 0.000), (14.63 ± 2.8) (p= 0.000) respectively, and positively correlated with social support (r= 0.195, p= 0.006), (r= 0.357, p = 0.000 (r= 0.186, p =0.008), respectively.

5. Discussion

Given that the COVID 19 pandemic continues to ravage lives across the world, forcing multitudes to change their way of life, it is pertinent to identify the factors that affect the mental health of this vulnerable population. The present study attempts to identify these and assesses its effect on the quality of life.

Majority of the participants lived with their spouses alone or with their children's families, and in independent homes / villas. This reflects the changing dynamics of the living arrangement among the geriatric age group in Kerala. With smaller families, lucrative job opportunities for the youth and raised standard of living in other parts of the world, the joint family system exist only in its skeleton form.[25] Absence of an extended family support could play a role in pushing the vulnerable into a state of despair.

Dependence for functional and instrumental ADLs are known to be associated with depression and anxiety.[26,27] Requiring assistance for transportation, and medication use can cause significant distress in the older person, particularly during a crisis. As in a study in China,[28] we found significant associations between anxiety and IADL impairment. In addition, we also noted this was associated with depression. However, contrary to our expectations, we did not find such an association with impairment in basic ADLs. This was probably due to our study group profile who were rather functionally independent.

Missing medications during the lockdown phase could generate a panic in the elderly, especially so in those who were on multiple medications. Polypharmacy, defined as being on more than 5 medications a day, is known to be associated with poor mental health.[29] Our study could not establish any such association with polypharmacy, possibly because of the lower proportion of such patients. We, however noted a reverse association of lesser medicine use and depression. The reasons for this cannot be explained and details on the medications and prescribers may hold the answer.

In spite of a higher proportion of a scholarly group in our study population, most had only a fair knowledge about COVID 19. This was lesser than in other parts of South India.[30] Media hype on the despair and rumours created by the pandemic, rather than health- related information on prevention, could be reasons. Fake news on social media and false information from ambiguous sources could have compounded this.[31]

Although depression rates were similar, our participants were only moderately anxious, slightly lesser compared to other parts of India.[32] Increased awareness of COVID preventive measures,[33] could be plausible explanations. Moreover, functional impairment, a key determinant of anxiety, was less than 5 % among our participants.

Having recently emerged from the deadly Nipah virus outbreak, Kerala's health department was globally applauded for its systematic approach to contain and mitigate its spread. The meticulous contact tracing and quarantining, followed by the health care workers, had probably allayed the fear following the pandemic.[34] The Govt of Kerala's initiative to provide psychosocial support, during the floods in 2018, involved community mobilization. The 'community kitchens' developed provided free cooked food packets to those isolated and marooned. The resilience displayed by the frontline workers during this disaster had instilled confidence in the general public.[35]

Our study exposed that social support was poor among the elderly, during the pandemic times as in other parts of the world.[36] The restrictions from the lockdowns, quarantines and fear of disease transmission can impact the social support system adversely, especially in India, where older people are bereft of any social security schemes.[37] In the absence of institutions that provide the same, the geriatric population in India will continue to rely on the family.

QOL is subjective and includes perceptions of satisfaction from areas of work, self-regard, recreation, opportunities to engage productively and creatively, and friends and friendships in one's life. In the present virus infected world, with the disease and restrictions pervading every sphere of life, QOL is affected clearly. We found that anxiety and depression took a heavy toll on the QOLs among the older population. Globally, studies have affirmed the negative influence of the pandemic on the QOL, some even beyond demographics.[38]

Although, studies[39] have demonstrated the impact of the lockdown on the mental health status in older persons, few have explored into the factors associated mental health and QOL in this subgroup during the pandemic times. However, there are several limitations. The small sample size comprised mainly of highly educated individuals and who were functionally independent. The results were obtained through questionnaires, distributed through google forms, via WhatsApp messages and emails, implying that the group was digitally well-connected, and therefore may not be extrapolated to the whole geriatric population. An objective assessment of the mental status was not done at any point and only a pre- pandemic assessment of their mental health status could reveal any direct impact. And lastly, this study was conducted in late November 2020, at a time when the state had descended the peak of the first wave, alleviating any anxiety and depression of the participants.

6. Conclusion

Our study reveals that enhancing social support could alleviate anxiety and depression and positively improve the QOL among older people in Kerala during the pandemic times. In developing countries, with a poor medical infrastructure, the pandemic to likely to recur in second and third waves, until effective treatment options and vaccines are available. Early screening of mental health and timely interventions by including local organizations can improve their quality of life of the elderly.

7. Source of Funding

None.

8. Conflict of Interest

None.

References

1. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet*. 2020;395(10223):497–506.
2. Tian S, Hu W, Niu L, Liu H, Xu H, Sy X. Pulmonary pathology of early phase 2019. novel Coronavirus (COVID-19) pneumonia in two patients with lung cancer. *J Thorac Oncol*. 2020;15(5):700–4.
3. Janssens JP, Pache JC, Nicod LP. Physiological changes in respiratory function associated with ageing. *Eur Respir J*. 1999;13(1):197–205.
4. Boeckxstaens P, Vaes B, Legrand D. The relationship of multimorbidity with disability and frailty in the oldest patients: A cross-sectional analysis of three measures of multimorbidity in the BELFRAIL cohort. *Eur J Gen Pract*. 2015;21(1):39–44.
5. Perappaden B. India's first coronavirus infection confirmed in Kerala ; 2020. Available from: https://www.thehindu.com/news/national/indias-first-coronavirus-infection-confirmed-in-kerala/article61638034.ece.
6. Biswas S. Coronavirus: Is the pandemic slowing down in India?" BBC News; 2020. Available from: https://www.bbc.com/news/world-asia-india-54419959.
7. Henley J. Coronavirus: France imposes lockdown as EU calls for 30-day travel ban; 2020. Available from: https://wwwtheguardiancom/world/2020/mar/16/coronavirus-spain-takes-over-private-healthcare-amidmore-european-lockdowns.
8. Gulia KK, Kumar VM. Reverse quarantine in Kerala: managing the 2019 novel coronavirus in a state with a relatively large elderly population. *Psychogeriatrics*. 2020;20(5):794–5.
9. Loxton M, Truskett R, Scarf B, Sindone L, Baldry G, Zhao Y. Consumer behaviour during crises: preliminary research on how coronavirus has manifested consumer panic buying, herd mentality, changing discretionary spending and the role of the media in influencing behaviour. *J Risk Financial Manag*. 2020;13(8):166. doi:10.3390/jrfm13080166.
10. Biswas S. Indian coronavirus: Why lock down 1.3bn people?; 2020. Available from: https://www.bbc.com/news/world-asia-india-52027745.
11. Sathyanarayana KM, Kumar S, James KS. Living Arrangements of Elderly in India: Policy and Programmatic Implications. *Cambridge Care*. 2012;p. 74–95. doi:10.1017/CBO9781139683456.005.
12. Share of elderly people* in selected states and union territories in India in 2011; 2020. Available from: https://www.statista.com/statistics/620090/aging-population-by-state-india/.
13. Primary Census Abstracts, Registrar General of India, Ministry of Home Affairs, Government of India; 2011. Available from: http://www.censusindia.gov..
14. Liu C, Lee YC, Lin YL, Yang SY. Factors associated with anxiety and quality of life of the Wuhan populace during the COVID-19 pandemic. *Stress Health*. 2021;37(5):887–97.
15. Chao M, Xue D, Liu T, Yang H, Hall BJ. Media use and acute psychological outcomes during COVID-19 outbreak in China. *J Anxiety Disord*. 2020;74:102248. doi:10.1016/j.janxdis.2020.102248.
16. Krendl AC, Perry BL. The impact of sheltering in place during the COVID-19 pandemic on older adults' social and mental well-being. *J Gerontol B Psychol Sci Soc Sci*. 2021;76(2):53–8.
17. Brorsson B, Asberg KH. Katz index of independence in ADL. Reliability and validity in short-term care. *Scand J Rehabil Med*. 1984;16(3):125–32.
18. Lawton MP, Brody EM. Assessment of older people: self-maintaining and instrumental activities of daily living. *Gerontologist*. 1969;9(3):179–86.
19. Narayana G, Kumar B, Ramaiah J, Jayasree T, Yadav DL, Kumar BK. Knowledge, perception, and practices towards COVID-19 pandemic among general public of India: A cross-sectional online survey. *Curr Med Res Pract*. 2020;10(4):153–9.
20. Lubben J, Blozik E, Gillmann G, Iliffe S, Kruse WR, Beck JC. Performance of an abbreviated version of the Lubben Social Network Scale among three European community-dwelling older adult populations. *Gerontologist*. 2006;46(4):503–13.
21. Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. *J Health Soc Behav*. 1983;24(4):385–96.
22. Almeida OP, Almeida SA. Short versions of the geriatric depression scale: a study of their validity for the diagnosis of a major depressive episode according to ICD-10 and DSM-IV. *Int J Geriatr Psychiatry*. 1999;14(10):858–65.
23. What quality of life? The WHOQOL Group. World Health Organization Quality of Life Assessment. *World Health Forum*. 1996;17:354–60.
24. Group W. Development of the WHOQOL: Rationale and current status. *Int J Ment Health*. 1994;23:24–56.
25. Singh JP. Problems of India's changing family and state intervention. . *Eastern Anthropologist*. 2010;63:17–40.
26. Zeiss AM, Lewinsohn PM, Rohde P, Seeley JR. Relationship of physical disease and functional impairment to depression in older people. *Psychology Aging*. 1996;11(4):572–81.
27. Sengupta P, Benjamin AI. Prevalence of depression and associated risk factors among the elderly in urban and rural field practice areas of a tertiary care institution in Ludhiana. *Indian J Public Health*. 2015;59(1):3–8.
28. Zhu S, Gao Q, Yang L, Yang Y, Xia W, Cai X. Prevalence and risk factors of disability and anxiety in a retrospective cohort of 432 survivors of Coronavirus Disease-2019 (Covid-19) from China. *PloS*

one. 2020;15(12):243883.
29. Holvast F, Van Hattem B, Sinnige J, Schellevis F, Taxis K, Burger H. Late-life depression and the association with multimorbidity and polypharmacy: a cross-sectional study. *Fam Pract*. 2017;34(5):539–84.
30. Narayana G, Kumar BP, Ramaiah JD, Jayasree T, Yadav DL, Kumar BK. Knowledge, perception, and practices towards COVID-19 pandemic among general public of India: A cross-sectional online survey. *Curr Med Res Pract*. 2020;10(4):153–45.
31. Tasnim S, Hossain MM, Mazumder H. Impact of Rumors and Misinformation on COVID-19 in Social Media. *J Prev Med Public Health*. 2020;53(3):171–5.
32. Grover S, Sahoo S, Mehra A, Avasthi A, Tripathi A, Subramanyan A. Psychological impact of COVID-19 lockdown: An online survey from India. *Indian J Psychiatry*. 2020;62(4):354–62.
33. John AM, Ashwathi P, Mathew J, Krishnaveni K, Kumar S, Mathew R. Knowledge, attitude and practice towards COVID-19 pandemic among keralites and the barriers involved-an online web survey. *Int J Pharm Res*. 2020;62(4):3010–5.
34. Kumar AA, Kumar AA. Deadly Nipah outbreak in Kerala: Lessons learned for the future. *Indian J Crit Care Med*. 2018;22(7):475–6.
35. Murthy R. Disaster mental health and social psychiatry: Challenges and opportunities. *Indian J Soc Psychiatry*. 2018;34:323–30.
36. El-Zoghby SM, Soltan EM, Salama HM. Impact of the COVID-19 pandemic on mental health and social support among adult Egyptians. *J Commun Health*. 2020;45(4):689–95.
37. Nagarkar A. Challenges and concerns for older adults in India regarding the COVID-19 pandemic. *Journal of gerontological social work*. 2020;63(4):259–61.
38. Kharshiing KD, Kashyap D, Gupta K, Khursheed M, Shahnawaz MG, Khan NH. Quality of Life in the COVID-19 Pandemic in India: Exploring the Role of Individual and Group Variables. *Commun Ment Health J* . 2021;57(1):70–8.
39. Balasundaram P, Libu GK, George C, Chandy AJ. Study on the effect of COVID-19 lockdown on health care and psychosocial aspects of elderly in Kerala State. *J Indian Acad Geriatr*. 2020;16:101–7.

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