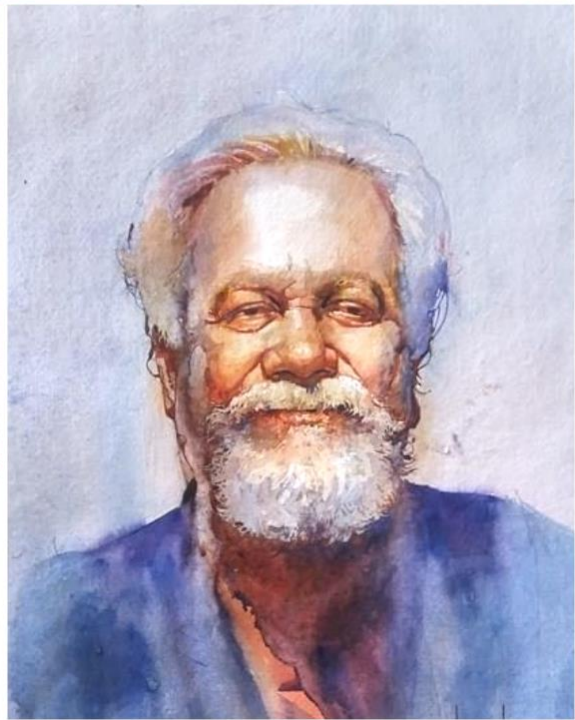
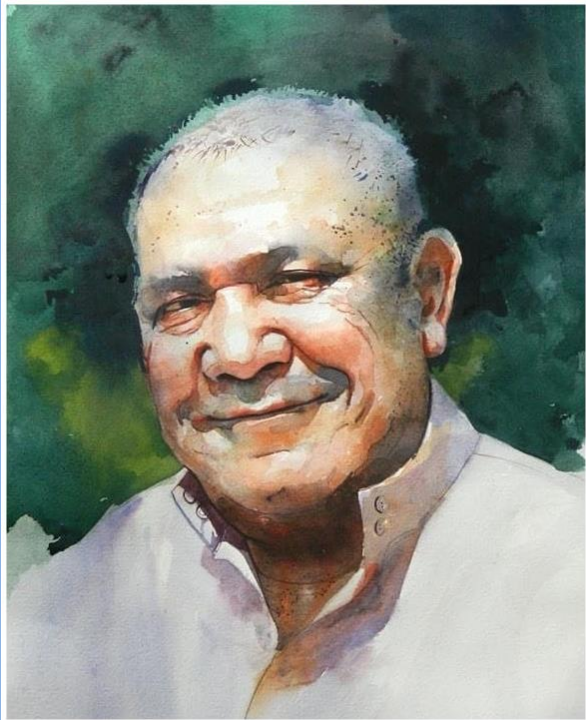
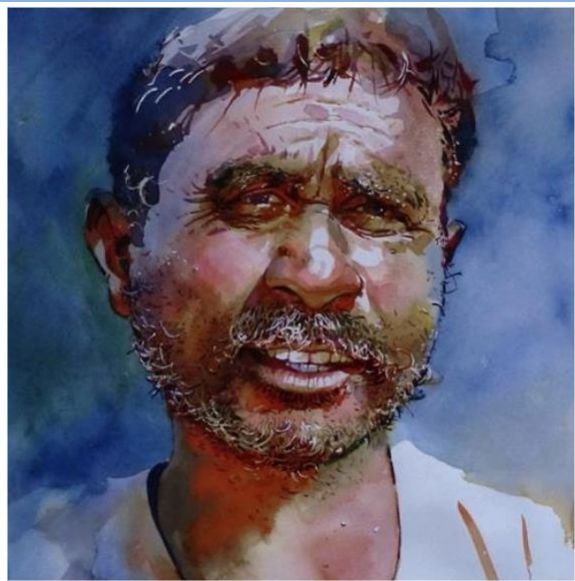


JOURNAL OF GERIATRIC CARE AND RESEARCH



- Description** The Journal of Geriatric Care and Research (ISSN 2397-5628) is a multidisciplinary, peer-reviewed, international journal covering all areas related to the care of the elderly. It is affiliated to Geriatric Care and Research Organisation (GeriCaRe). It publishes articles from all fields relevant to old age such as geriatric medicine, psychiatry, neurology, nursing, end of life care, public health and related fields like gerontology, sociology, psychology, culture and law. Besides the professionals, the journal intends to reach older persons and their carers as its readers. The key feature of the articles is their contribution towards the care of elderly through reporting, discussing and debating current issues of importance.
- Aim and scope** The Journal of Geriatric Care and Research intends to share evidence based knowledge improving care of the older persons. It is dedicated to showcase recent advances in various fields from basic sciences to medicine and social sciences to cultural and legal issues in the field of geriatric care. It takes a holistic view highlighting interrelationship of various disciplines contributing to general well-being and quality of life of the older persons throughout the world.
- Submission** The Journal of Geriatric Care and Research covers a whole range of topics through authoritative articles submitted from across the globe. Manuscripts for publication should be prepared according to the 'Instruction to authors' and submitted by email at jgcr.gericare@gmail.com. All papers in this journal are peer-reviewed. No person is permitted to take any role in the peer-review process of a paper in which they have an interest.
- Subscriptions** The journal is freely distributed. Individuals and organizations interested to receive the journal should contact jgcr.gericare@gmail.com for e-subscriptions.
- Sponsorship** The Journal of Geriatric Care and Research is free to readers and authors. It reaches out to older persons, their carers and multidisciplinary professionals involved in care and support of older persons. The journal depends upon sponsorship rather than charging authors or readers to meet its cost of operations. There are many sponsorship options and we invite you to consider sponsoring this charitable venture.
- Sponsors and contributors names will be displayed prominently in the 'Sponsors & Contributors' section of the Journal.
- The journal adheres to a strict policy of keeping all editorial process of the journal independent of the financial sponsors and contributors. The sponsors and contributors do not influence material published in the journal. Assignment of any internal roles (such as reviewer, editor, etc.) depends exclusively on demonstrated competence, along with interest in the journal's aims and scholarly engagement with the journal.
- Advertising** Correspondence should be addressed to GeriCaRe through email at org.gericare@gmail.com. Journal does not endorse any advertised material and it reserves the right to accept or reject the advertisement proposals.

Editor

Nilamadhab Kar, *Black Country Healthcare NHS Foundation Trust, Wolverhampton, UK*

Editorial Board

Shabbir Amanullah, *The University of Western Ontario, London, Canada*

Ankur Barua, *School of Medicine, International Medical University, Kuala Lumpur, Malaysia*

Srikala Bharath, *National Institute of Mental Health and Neurosciences, Bangalore, India*

Sarmishtha Bhattacharyya, *Betsi Cadwaladr University Health Board, Wales*

Michael Clark, *London School of Economics and Political Science, London, UK*

David Jolley, *University of Manchester, Manchester, UK*

Zubair Kabir, *University College Cork, Ireland*

Paul Kingston, *University of Chester, Chester, UK*

Maju Mathew Koola, *Stony Brook University, Stony Brook, NY, USA*

KB Kumar, *Amity University, Noida, India*

Yohko Maki, *National Center for Geriatrics and Gerontology, Obu, Japan*

Bana Bihari Mishra, *Kalinga Institute of Medical Sciences, Bhubaneswar, India*

Umasankar Mohanty, *Manual Therapy Foundation of India, Mangalore, India*

N. Sreekumaran Nair, *Jawaharlal Institute of Postgraduate Medical Education & Research, Puducherry, India*

Nikhil Palekar, *Stony Brook University, USA*

Tarik Qassem, *University of Warwick, Warwickshire, UK*

Raghavakurup Radhakrishnan, *Northland District Health Board, Whangarei, New Zealand*

Shovan Saha, *Manipal University, Manipal, India*

Ravi Samuel, *The Psychotherapy Clinic, Chennai, India*

Sujata Sethi, *Post Graduate Institute of Medical Sciences, Rohtak, India*

Lochana Shrestha, *Nepalese Army Institute of Health Sciences, Kathmandu, Nepal*

Surendra P Singh, *University of Wolverhampton, UK*

P T Sivakumar, *National Institute of Mental Health and Neurosciences, Bangalore, India*

Sarvada C. Tiwari, *King George's Medical University, Lucknow, India*

Thagadur Chickabasaviah Yasha, *National Institute of Mental Health and Neurosciences, Bangalore, India*

Editorial advisors

Murali Reddy, *Australian National University, Canberra, Australia*

Sudeshna Chakraborty, *Geriatrics Community Healthcare, Toronto, Canada*

Ramalingam Chithiramohan, *Birmingham and Solihull Mental Health Trust, Birmingham, UK*

Anand Ramakrishnan, *Nottinghamshire Healthcare NHS Trust, Nottinghamshire, UK*

Martin Yates, *Leighton Hospital, Crewe, UK*

Publisher

Geriatric Care and Research Organisation (GeriCaRe)

Sponsors

The Institute of Insight (MetaInsight)

Quality of Life Research and Development Foundation (QoLReF)

Creative Support

GenX Studios, Shreyan Kar, Gabrielle Johnson

Correspondence

Steps to Health, Showell Circus, Wolverhampton, WV10 9TH, UK
jgcr.gericare@gmail.com

Copyright of all published material in this journal is held by the authors unless specifically stated otherwise. The views and opinions expressed by the authors are their own. They do not necessarily reflect the views of their employers, the journal, the editorial board or GeriCaRe. The publisher and editors are not responsible for any error of omission or fact. Permission is required for commercial use of the articles. For permissions please apply to GeriCaRe through email org.gericare@gmail.com.

NLM Title Abbreviation:	J Geriatr Care Res
ISO Abbreviation:	J Geriatr Care Res
Title(s):	Journal of geriatric care and research.
Other Title(s):	JGCR
Publication Start Year:	2014
Country of Publication:	England
Publisher:	Geriatric Care and Research Organisation (GeriCaRe)
Language:	English
ISSN:	2397-5628 (Electronic) 2397-5628 (Linking)
Electronic Links:	https://independent.academia.edu/jgcr https://journals.indexcopernicus.com/search/details?id=43816
NLM ID:	101736616 [Serial]
OCOLC	1013748579

Indexing and archiving

PubMed: Selected citations only [Citations are for articles where the manuscript was deposited in PubMed Central (PMC) in compliance with public access policies.]

Index Copernicus

CiteFactor

JournalGuide

Ulrich's (ProQuest)

Google Scholar

Publons

LAWMUNION

National Union List of Journals (UK and Republic of Ireland)

British Library, UK

The Library of Congress, USA

Contents

- 101 Coping with the COVID-19 pandemic**
N Kar
- 103 Impact of COVID-19 pandemic and lockdown on elder abuse**
K Rina, T Maiti, M Panigrahi, B Patro, N Kar, S K Padhy
- 108 Approaches to reduce the incidence of cognitive decline and dementia**
D Jolley
- 113 Promotion of dementia-friendly communities and extension of healthy life expectancy**
Y Maki, M Mori
- 120 Demographic and socio-economic differentials of quality of life of elderly people in rural Nepal**
M R Joshi
- 128 Posterior cortical atrophy: a case report on a rare form of dementia**
P Nwaubani, S Young, E Nazir
- 133 Perceived social support among hospitalized elderly patients in Indian settings**
R Saini, A Sharma, G Kaur, J Brar, N Hans, R Kaur, S Kaur, S Kaur
- 140 Religion and behaviour: relevance during the current COVID-19 pandemic**
S K Kar, S Shukla, V Menon, S M Y Arafat
- 143 COVID-19 pandemic and care of elderly: measures and challenges**
S Mishra, R Bhoi, J P R Ravan, S Nath, N Kar, S K Padhy
- 147 Healthy Ageing 2020: International Conference**
T Kar
- 148 Tree**
S Das
- I Instructions for authors**

Cover Golden years



Copyright © *Bijay Biswaal, Nagpur, India*



The Institute of Insight
[A non-profit organisation]
United Kingdom

The Institute of Insight is a non-profit organisation with an objective to advance education, promote health and creativity to improve quality of life by providing opportunities for lifelong learning, training, appropriate services, research and publications for the benefit of general public and professionals worldwide.

The Institute is working in partnership with Quality of Life Research and Development Foundation (QoLReF) and Geriatric Care and Research organisation (GeriCaRe) which are academic and charitable organisations supported by resource persons worldwide.

The Institute of Insight is currently supporting various public education initiatives, research related works and publications. It is contributing to the Healthy Ageing Conference a public education event in India, for elderly people and their caregivers. It sponsors publication of Journal of Geriatric Care and Research, which is freely available to general public and professionals.

Coping with the COVID-19 pandemic

Nilamadhab Kar

Abstract

With the enormous impact that COVID-19 pandemic has brought on life, much beyond just the health concerns, coping with this traumatic experience has become an important issue. While people and governments are trying to deal with the situation in their own ways, coping emotionally and finding an effective way out is the question for many. There are many strategies and supports which are known; and many are being tried in this challenging period. However, personal resilience, posttraumatic growth and hope will be key factors for a long journey in the recovery.

Key words

Coping, Hope, Posttraumatic Growth, Psychological Stress, Resilience

The Trauma

The COVID-19 pandemic is an international disaster in recent times.¹ People are going through massive amounts of traumatic experience of: bereavements, risk of death of safe and family, job losses, isolation, lack of accurate information, lack of definitive treatment and so on. It is a disaster that, although mankind knew about its possibility, it appears, it was least prepared for it. The stress and trauma people have gone through is not going to end after the pandemic and in all probabilities the effects will linger on.

The traumatic experiences of the health care professionals were somewhat unique. In the initial phase there was a 'you know that you do not know' situation which was compounded by inaccurate and doubtful information. There was no clarity of treatment modalities and doctors tried everything that may have a possibility to change the outcome. They have gone through moral dilemma about providing the facilities to the patients in really resource-scarce situations; deciding who should get the available service and who should not is a difficult one; and many professionals must have struggled with it across the world. All these are in a background of: threat of death of themselves, colleagues and family, lack of protective equipment and having to work in areas beyond their expertise.²

The Effects

Many studies report increased stress levels in general population during the pandemic. It is clearly evident that there has been major impact of the stress on the mental health of the people.³ There are new onset anxiety, depression, posttraumatic stress disorder, substance use, and exacerbation of existing mental illnesses in mentally ill individuals. Secondary trauma characterised by the impact on livelihood is also contributing to mental health problems.³ Traumas may also manifest in various other ways, from psychosomatic illnesses to exacerbation of physical illnesses, addictive behaviours, self-harm, abuse, absenteeism, presenteeism, etc. There will be long term consequences as well.

Dealing with the trauma and coping

Dealing with the trauma will need multipronged multidisciplinary, multiagency approach. These challenging times have seen massive international cooperation and development of vaccines at amazingly short period. While the governments, health services, institutions and businesses are trying to deal and cope with the effects of COVID-19 currently and long term; individuals are also trying in their own way to cope. Coping is highly individual and one strategy does not suit everyone. It is important to discuss various ways and means people are trying to cope and how effective coping is so vital.

Observations suggest that people are trying to cope by hoping for the best, remaining busy, having faith in God, trying to deal with the problems, sharing feeling with others and many others ways.⁴ At the same time, avoidant coping has been reported to be associated with distress, impacting upon wellbeing;⁵ whereas cognitive and prosocial coping are associated with less mental health problems.³

Many affected persons will need further help. From informal support from family and friends, to practical support for sustaining the livelihoods, but a proportion will need formal counselling, psychotherapies and even medical attention. Accepting that this is an unusual period and that 'it's ok, not to be ok' in this kind of traumatic period may usher the path of recovery. 'Having a buddy' with whom one can share all and bare all emotions helps a lot. It is important to have a friend with whom one can open up and discuss almost everything. 'Being there' with

people, listening, sharing their woes can work really well, even if they sound very basic suggestions or strategies. It is the 'genuineness' that matters.

Counselling and other psychological support can involve discussing the coping methods that the individuals have utilised in the past during traumatic times. Promoting cognitive coping and prosocial behaviours are expected to be helpful. There are long lists of examples of strategies that people use, which can be shared as examples for individuals may then choose the most suitable ones for them. While most of the time with practical help, many people recover well and fast, it is for many who remain distressed with the trauma who would need further psychological interventions. Technology, online resources and tele-services for assessment and psychotherapy may support people for effective coping during this challenging phase; and these are being actively used.⁶

Health care professionals may have specific issues to deal with and discuss based on their work experience. Sharing, compassion, mindfulness, work-life balance, social connectedness, etc. are some of the key strategies along with peer group support and professional counselling for those who need may be helpful. Many practical techniques and models have been suggested;⁶ and health organisations should provide and facilitate such support.

Following a traumatic experience, the outcomes can be better than bitter. People learn and grow from their experience and that makes them better prepared or ready to prevent such experiences in future. Posttraumatic growth (PTG) is a plausible outcome following the negative experiences during COVID-19 pandemic. It has been reported that positive changes in worldview, life's goals, personal behaviour, relationships, may happen with enhanced appreciation of life itself and stronger sense of spirituality.² It is important to learn from these miseries; traumas can teach individuals to grow and be better human beings.

Resilience is the personal capability of bouncing back or buoyancy; and people are at different grades of resiliency based on how effective their strategies are. Resilience is slightly different from the PTG.⁷ In PTG a person who struggles in traumatic situations gains new knowledge, realisations and then grows out of it, and becomes better. Often it is the less resilient people who are more likely to struggle through this period of trauma and may have PTG. It is important to realise that whatever situation we are in during this COVID-19, it is possible that many will come out better, more prepared, stronger to cope and deal with adverse situations.

Spiritual change is a possibility following adverse experiences and comes as a great realisation to many to appreciate how integrated and connected people are. It goes beyond one's own personal values, religious beliefs, and sociocultural underpinnings to imbibe global, human values. It makes sense to participate, give, share with fellow human beings and strive to make lives more meaningful. That way, tragedies become not only more

bearable but lessons for future growth to higher understandings.

Recovery

Onwards it should be a journey of recovery. With the help of science, practical help from governments and non-governmental institutions, through the individual's own coping strategies and learnings from the trauma, it may be possible for people to cope well and not only regain lost grounds, but achieve greater heights in human success. The process of recovery will take time, adequate preparation and continued effort from everyone; with hope as a key factor in the journey.

Author information: Nilamadhab Kar, MD, DPM, DNB, MRCPsych, Consultant Psychiatrist, Black Country Healthcare NHS Foundation Trust, Wolverhampton, UK, Email: n.kar@nhs.net

Correspondence: Nilamadhab Kar, Steps to Health, Showell Circus, Wolverhampton, WV10 9TH, UK. Email: n.kar@nhs.net

Competing interests: None.

Received: 3 December 2020; **Revised:** 21 December 2020; **Accepted:** 21 December 2020

Copyright © 2020 The Author(s). This is an open-access article distributed under the terms [CC BY-NC] which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Citation: Kar N. Coping with the COVID-19 pandemic. *Journal of Geriatric Care and Research* 2020, 7(3): 101-102.

References

1. Kar N. Covid-19 and older adults: in the face of a global disaster. *J Geriatr Care Res.* 2020 May 16;7(1):1–2.
2. Olson K, Shanafelt T, Southwick S. Pandemic-driven posttraumatic growth for organizations and individuals. *JAMA.* 2020 Nov 10;324(18):1829.
3. Guo J, Feng XL, Wang XH, van IJendoorn MH. Coping with COVID-19: Exposure to COVID-19 and negative impact on livelihood predict elevated mental health problems in Chinese adults. *Int J Environ Res Public Health.* 2020 May 29;17(11).
4. Kar N, Kar B, Kar S. Stress and coping during COVID-19 pandemic: result of an online survey. *Psychiatry Research.* 2020 Nov 26;113598.
5. Dawson DL, Golijani-Moghaddam N. COVID-19: Psychological flexibility, coping, mental health, and wellbeing in the UK during the pandemic. *J Contextual Behav Sci.* 2020 Jul;17:126–34.
6. Tomlin J, Dalglish-Warburton B, Lamph G. Psychosocial support for healthcare workers during the covid-19 pandemic. *Front Psychol [Internet].* 2020 [cited 2020 Dec 21];11. Available from: <https://www.frontiersin.org/articles/10.3389/fpsyg.2020.01960/full>
7. Weir K. Life after COVID-19: Making space for growth [Internet]. <https://www.apa.org>. 2020 [cited 2020 Dec 10]. Available from: <https://www.apa.org/monitor/2020/06/covid-life-after>

Review

Impact of COVID-19 pandemic and lockdown on elder abuse

Kumari Rina, Tanay Maiti, Mahima Panigrahi, Binod Patro, Nilamadhab Kar,
Susanta Kumar Padhy

Abstract

Elder abuse is a universal pervasive problem of paramount public health importance which garners little attention. Recent World Health Organization estimates suggest that 1 in 6 elders suffer from abuse in various ways, like physical, psychological, sexual, material exploitation and neglect, by their trustworthy caregivers. Potential risk factors are social isolation, cognitive impairment, traumatic life events, dependence on abusers, poor physical and mental health and low social support. Due to the COVID-19 pandemic and the resultant social restrictive measures such as lockdown in most places throughout the world, elder abuse has possibly increased. This review discusses plausible reasons and various socio-cultural factors of elder abuse, especially from the context of a developing country, such as India and the possibility of an ever-growing menace into a 'social pandemic' in future.

Key words

Aged, Coronavirus pandemic, COVID-19, Culture, Elder Abuse, Social Isolation

Introduction

"Are elderly in a cage, under a lockdown within a lockdown?"- Anonymous

The United States National Academy of Sciences proposed a widely accepted scientific definition of elder abuse as: "(a) intentional actions that cause harm or create a serious risk of harm (whether or not harm is intended) to a vulnerable elder by a caregiver or other person who stands in a trust relationship, or (b) failure by a caregiver to satisfy the elder's basic needs or to protect the elder from harm".¹ This definition includes two major points: that an older person has suffered injury, deprivation, or unnecessary danger, and that another person (or persons) in a relationship of trust was responsible for causing or failing to prevent the harm. It is well known fact that the elder abuse remains one of the most hidden and underreported violations, only 1 out of nearly 24 elder abuse cases are actually reported to authorities. Added to the misery, most physicians think first of physical abuse when they consider of elder mistreatment, cases of

neglect are often missed, until there are signs of physical abuse.² It has been found that the ethical dilemmas are associated while managing confidentiality when abuses are detected during data collection. Trivialization of emotional abuse, consideration of abuse as a 'personal family matter' and various socio-cultural inhibitions have resulted in the poor projection of gravity of the problem. Parallels have increasingly been drawn between elder abuse and the broader issue of family and domestic violence.

Prevalence

According to World Health Organization (WHO) estimates reported in 2017, 1 in 6 elders suffer from abuse. That means nearly 141 million people globally.³ Few surveys claims a global prevalence rate for overall elder abuse as 15.7% and 25% in India (2018).^{4,5} While it is too early to have robust, updated data for 2020, a recent Indian survey conducted during June 2020 reveals that overall, prevalence rate of elder abuse has doubled (56.1%).⁶ A recent large exploratory cross-sectional study in institutional settings in Norway, 76% staff observed one or more incidents of elder abuse during the past year; while 60.3% had perpetrated one or more incidents of abuse themselves in the same period.⁷ In the desperate conditions of isolation, lockdown and quarantine caused by the COVID-19 pandemic, it is possible that the elderly in all kind of situation at home or in care homes are more vulnerable considering increased dependency needs.

Types of elder abuse

Elder abuse was categorized into 'Macro', 'Mezzo' and 'Micro' level of elder abuses.⁸ Macro abuse refers to issues at the societal level such as lack of access to health care, poor social security, and institutional abuse. Mezzo level abuse refers to the injustice heaped on older people at the community level such as ageism, anti-social activities against older people, and marginalizing them. Micro level definitions usually deal with the conflicts and interactions between two people. It may be between an elder person and an adult family member or a caregiver in an institution.

Often, researchers, practitioners, and most legal statutes recognize the following types of abuse: (a) physical abuse, which includes acts carried out with the intention

to cause physical pain or injury; (b) psychological abuse, defined as acts carried out with the intention of causing emotional pain or injury; (c) sexual assault; (d) material exploitation, involving the misappropriation of the elder's money or property; and (e) neglect, or the failure of a designated caregiver to meet the needs of a dependent older person.⁹ Active neglect is the refusal or failure to undertake a care-giving obligation. Usually, this is a conscious or an intentional attempt to harm the other. Passive neglect is the refusal or failure to fulfill a care taking obligation. Usually, this is not conscious or intentional.¹⁰

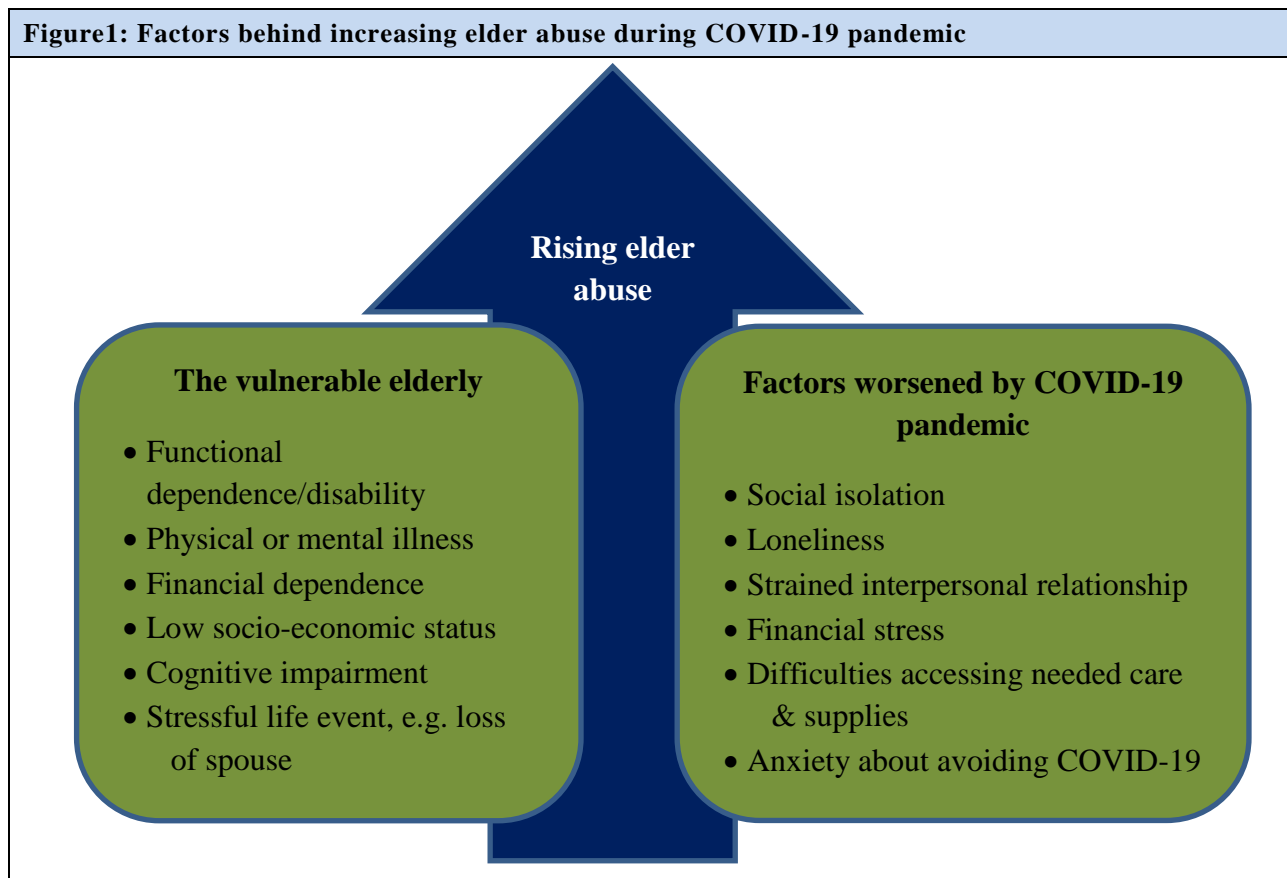
Risk factors for elder abuse

The WHO has indicated certain risk factors for abuse, such as social isolation, cognitive impairment, particularly dementia, traumatic life events in the past including interpersonal and domestic violence, and dependence on abusers. In addition an abuser's dependency on the older person (often financial) also increases the risk of abuse.³ Other risk factors postulated in the literature are older women (specially emotional and financial abuse) living with spouse or adult children, shared living environment, living with a large number of household members other than a spouse, having a lower income functional impairment, poor physical and mental health, and low social support.¹¹ Intergenerational transmission of violence, where an abused child may abuse his or her abuser parent when the parent is getting old, also poses a greater risk of abuse as examined as a risk factor in a

previous community-based participatory study.¹² Perpetrators are most likely to be adult children or spouses, more likely to be male, to have a history of past or current substance abuse, mental or physical health problems, unemployed, socially isolated, financial problems, experiencing major stress and have increased likelihood of legal problems.¹³ Some studies from the United States, Canada, and Europe indicate that being married is associated with aggregated (incorporating all kinds of mistreatment) elder abuse, especially emotional and physical abuse.^{14,15} However, other studies from the United States, Europe, Mexico, and China have found that being single, separated/divorced, or widowed is associated with higher odds of aggregated elder abuse.¹⁶

Vulnerable elderly in a developing country: Indian scenario

Senior citizens make up about 9% of India's population and about half of them, around 53 million, are very poor, and two-thirds live in villages.^{17,18} Half of the Indian elderly are dependents upon their families for their financial and medical needs, often due to widowhood, divorce or separation, and 70% are women.¹⁹ Most (93%) of the elderly in India belong to the unorganised sector and do not have any post-retirement benefits, formal social security mechanism or health benefits.²⁰ Studies have shown a gradual decline in the standard of life of the aged with high rates of dependency and lack of basic needs.²¹ Such circumstances make elderly more vulnerable for abuse in a developing nation, such as India.



Relationship of elder abuse with COVID-19 pandemic and resultant restrictions

Older adults are at highest risk of complications and death from COVID-19; in addition, they may also be at greater risk for negative consequences from the measures for protection against viral transmission, which are mostly lockdown, shutdown, social distancing etc.²² In this challenging situation their increased vulnerability may increase the risk of abuse due to various factors (Fig 1).

Due to the anxiety and concerns to avoid infection, home-confined elderly people have extremely limited or no communication with their friends, family, neighbours and other significant figures in their life. The situation is dire when many elderly do not have a phone or the Internet for communication or the ability to use them. A higher levels of social support and greater embeddedness in a social network lower the risk of elder abuse.^{23,24} Socialization leads to positive mental health and improves quality of life.²⁵ Possibly socialization assists elder society to vent out their emotions, more so when they discuss about the humiliations met in the family. Because of restriction in mobility, inadequate communication facility, elderly are forced to struggle with loneliness and social isolation (which is a well-known risk factor for abuse); and in these circumstances when the protective factors are diminished, it makes the elderly more vulnerable, and the risk of abuse increases further.²²

During the pandemic, WHO and many countries have advised elderly to stay at home to decrease the chance of getting infected.²⁶ As a precaution against the novel coronavirus many organisations and companies have instructed their employees to work from home. Schools and colleges are shut as well.²⁷ This implies that elderly are spending more time with their family and caregivers. While this could be a joyous occasion of having family together at home for more period; however often such increased interaction leads to worsening of any existing interpersonal issues resulting in arguments and increasing the risk of abuse: verbal, physical or neglect.

In an online survey in India conducted during June 2020, on 5099 elderly respondents, 71% believed that abuse have increased during lockdown period.⁶ Among them 58% claimed that interpersonal relationships is the main factor responsible for rising incidence of elder abuse in families. More than half (56.1%) said that they are facing abuse while 63.7% were neglected in their families and society. Common ways of abuse were disrespect, verbal abuse, avoiding communication ('silent treatment', not talking to them), ignoring their daily needs, denying proper food, denying medical support, financial cheating, physical violence, emotional neglect and forcing them to work. Older persons are not only facing social restrictions but also family restrictions, imposed by their own respective families. Majority (79%) cited financial problem as a reason for mistreatment. The COVID-19 lockdown impacted the livelihood of 65% elders, 61% felt confined and socially isolated while 42% had worsening of health conditions. Most (78%) faced challenges accessing essential goods and services. The top three

essential goods and services which the elders had difficulty in accessing during the lockdown were access to food, groceries and medicines.⁶

Unavailability of medications leads to negative impact on physical and mental health of the persons. Poor compliance to the psychotropic medications is known to be associated with symptoms of irritability, anger, aggression and violence.²⁸ Poor mental health either in the family member or in the older persons enhances the risk of abuse.²⁹ There is surge of substance abuse (both new and relapse) and addictive behaviors (gaming, internet, etc.) in this period; which may lead to negative interaction amongst the family members. In addition, loss of job, stress and resultant frustration in the part of adult children and erosion of generational bond, truly eviscerates safety of older people at home.⁶ These factors have contributed further to an already existing major public health issue,³⁰ to grow as a 'hidden epidemic' of abuse in recent times of the pandemic.^{6,31}

In addition the risks at home, services have been affected badly throughout the world during the COVID-19 pandemic. Many hospitals across the globe ceased outpatient services and are providing health services channelized through emergency or telemedicine. This has particular concerns for the elderly; as they may not be able to use the gadgets,³² or may not communicate confidentially with the clinicians as there may be other family members around. The virtual physical examination has extreme limitations compared with the traditional in-house examinations.³³ Due to the lack of a detailed physical examination, detecting the signs or the medical markers of elder abuse and neglect can be difficult. Most elderly, as observed in clinics, do not feel comfortable to volunteer the abuse information against their family members; even when asked specifically.³⁴ Level of confidence in remote/virtual consultations might pose a specific challenge for the doctor-patient relationship to effectively assess and deal with a sensitive area such as abuse. Considering these changing scenarios, it is likely that magnitude of elder abuse may increase in coming times.³⁵

Conclusion

Undeniably, this is a time of challenge and uncertainty in the shadow of COVID-19 which has profoundly impacted almost all the people; and for older people the trials are even greater. In addition to various socioeconomic, physical and mental health related issues, greater number of older adults are experiencing abuse and the risk may further increase. It requires greater awareness, efforts from everybody to prevent this from happening in the first place, curb its occurrence with effective measures, with appropriate, adequate and timely support to families and the elderly. Brushing under the carpet may worsen it and lead to a pandemic alongside the COVID-19. Multidisciplinary and multilevel proactive actions regarding elder abuse are urgently required.

Acknowledgement

Geriatric Care and Research Organisation (GeriCaRe)

Author information: Kumari Rina, MD, Assistant Professor, Department of Psychiatry, All India Institute of Medical Sciences (AIIMS), Bhubaneswar, India; Email: psych_kumari@aiimsbhubaneswar.edu.in; **Tanay Maiti**, DPM, DNB, Senior Resident, Department of Psychiatry, All India Institute of Medical Sciences (AIIMS), Bhubaneswar. Email: drtanaymaiti@gmail.com; **Mahima Panigrahi**, MD, Assistant Professor, Department of Community Medicine & Family Medicine, IMS & SUM Hospital, Bhubaneswar, India, Email: mahima.panigrahi@gmail.com; **Binod Patro**, MD, Additional Professor, Department of Department of Community Medicine & Family Medicine (CM&FM), All India Institute of Medical Sciences (AIIMS), Bhubaneswar India, Email: patrobinod@gmail.com; **Nilamadhab Kar**, MD, DNB, DPM, MRCPsych, Consultant Psychiatrist and College Tutor, Black Country Healthcare NHS Foundation Trust, Wolverhampton, UK, Email: n.kar@nhs.net; **Susanta Kumar Padhy**, MD, Additional Professor & Head, Department of Psychiatry, All India Institute of Medical Sciences (AIIMS), Bhubaneswar, India; Email: psych_susanta@aiimsbhubaneswar.edu.in / susanta.pg30@yahoo.on

Correspondence: Dr Susanta Kumar Padhy, MD, Additional Professor & Head, Department of Psychiatry, All India Institute of Medical Sciences (AIIMS), Bhubaneswar. Email: psych_susanta@aiimsbhubaneswar.edu.in / susanta.pg30@yahoo.on

Competing interests: None.

Received: 17 July 2020; **Revised:** 22 August 2020; **Accepted:** 24 August 2020

Copyright © 2020 The Author(s). This is an open-access article distributed under the terms [CC BY-NC] which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Citation: Rina K, Maiti T, Panigrahi M, Patro B, Kar N, Padhy SK. Impact of COVID-19 pandemic and lockdown on elder abuse. Journal of Geriatric Care and Research 2020, 7(3): 103-107..

References

- Wallace RB, Bonnie RJ: Editors. National Research Council (US) Panel to Review Risk and Prevalence of Elder Abuse and Neglect: Elder Mistreatment: Abuse, Neglect, and Exploitation in an Aging America. Washington (DC): National Academies Press (US); 2003.
- Elder Abuse Statistics - Statistics on Elderly Abuse over Time [Internet]. [cited 2020 Jul 21]. Available from: <https://www.nursinghomeabusecenter.com/elder-abuse/statistics/>
- WHO. Elder abuse. [Internet]. 2018 [cited 2020 Jul 3]; Available from: http://www.who.int/ageing/projects/elder_abuse/en/
- Yon Y, Mikton CR, Gassoumis ZD, Wilber KH. Elder abuse prevalence in community settings: a systematic review and meta-analysis. *Lancet Glob Heal*. 2017 Feb 1;5(2):e147–56.
- HelpAge India Report-2018. Changing Cultural Ethos & Impact of Technology. 2018.
- HelpAge India Report. The Elder Story: Ground Reality During Covid 19 Impact & Challenges Nationwide Survey (June 2020). 2020;(June):1–16.
- Botngård A, Eide AH, Mosqueda L, Malmedal W. Elder abuse in Norwegian nursing homes: a cross-sectional exploratory study. *BMC Health Serv Res*. 2020;20(1):9.
- Bennett GC, Kingston P, Penhale B. The dimensions of elder abuse: perspectives for practitioners. *Macmillan International Higher Education*; 1997 Nov 11. p. 272.
- Pillemer K, Burnes D, Riffin C, Lachs MS. Elder abuse: global situation, risk factors, and prevention strategies. *Gerontologist*. 2016 Apr 1;56(Suppl_2):S194-205.
- Nissen C. Helping Elderly Victims: The Reality of Elder Abuse. *J Gerontol Nurs*. 1990;16(6):39.
- WHO. [Internet] Elder abuse. [cited 2020 Jul 1]. Available from: <https://www.who.int/news-room/fact-sheets/detail/elder-abuse>
- Dong X, Li G, Simon MA. The association between childhood abuse and elder abuse among Chinese adult children in the United States. *J Gerontol Series A Biol Sci Med Sci*. 2017 Jul 1;72(suppl_1):S69-75.
- Amstadter AB, Zajac K, Strachan M, Hernandez MA, Kilpatrick DG, Acierno R. Prevalence and correlates of elder mistreatment in South Carolina: The South Carolina elder mistreatment study. *J Interpers Violence*. 2011 Oct;26(15):2947-72.
- Pillemer K, Finkelhor D. The prevalence of elder abuse: A random sample survey. *Gerontologist*. 1988 Feb 1;28(1):51-7.
- Podnieks E, Anetzberger GAI, Wilson SJ, Teaster PB, Wangmo T. WorldView environmental scan on elder abuse. *J Elder Abuse Negl*. 2010;22(1–2):164–79.
- O’Keeffe M, Hills A, Doyle M, McCreadie C, Scholes S, Constantine R, et al. [Internet] UK Study of Abuse and Neglect of Older People Prevalence Survey Report. 2007. [cited 2020 July 29]. Available at <https://www.kcl.ac.uk/scwru/pubs/2007/okeefeetal2007ukstudyprevalence.pdf>
- Aravind I. Corona impact: Covid-19: Why social distancing is a big worry for senior citizens - The Economic Times [Internet]. [cited 2020 Jul 16]. Available from: <https://economictimes.indiatimes.com/news/politics-and-nation/covid-19-why-social-distancing-is-a-big-worry-for-senior-citizens/articleshow/74866566.cms?from=mdr>
- Lena A, Ashok K, Padma M, Kamath V, Kamath A. Health and social problems of the elderly: A cross-sectional study in Udupi Taluk, Karnataka. *Indian J Community Med*. 2009 Apr 1;34(2):131–4.
- Rajan S. Social assistance for poor elderly: How effective? *Econ Polit Wkly*. 2001;36(8):613–7.
- HelpAge India. Home care for the elderly: A call to Action. 2013;50(2):164–7.
- Alam M. Ageing in India: Socio-economic and Health Dimensions. New Delhi: Academic Foundation; 2006.
- Wu Z, McGoogan JM. Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China: summary of a report of 72 314 cases from the Chinese Center for Disease Control and Prevention. *JAMA*. 2020 Apr 7;323(13):1239-42.
- Acierno R, Hernandez MA, Amstadter AB, Resnick HS, Steve K, Muzzy W, et al. Prevalence and correlates of

- emotional, physical, sexual, and financial abuse and potential neglect in the United States: The National Elder Mistreatment Study. *Am J Public Health*. 2010 Feb;100(2):292-7.
24. Chokkanathan S, Lee AEY. Elder mistreatment in urban India: A community based study. *J Elder Abus Negl*. 2005;17(2):45-61.
 25. Harandi TF, Taghinasab MM, Nayeri TD. The correlation of social support with mental health: A meta-analysis. *Electron Physician*. 2017 Sep;9(9):5212.
 26. WHO. WHO Delivers Advice and Support for Older People during COVID-19 [Internet]. World Health Organization. 2020 [cited 2020 Aug 4]. Available from: <https://www.who.int/news-room/feature-stories/detail/who-delivers-advice-and-support-for-older-people-during-covid-19>
 27. BBC News. Coronavirus: Countries enforce mass closures to stem spread [Internet]. [place unknown]: BBC News Services; 13 March 2020 [cited 2020 Aug 9]. Available from: <https://www.bbc.com/news/world-51862347>
 28. Buckley PF, Noffsinger SG, Smith DA, Hrouda DR. Treatment of the psychotic patient who is violent. *Psychiatr Clin North Am*. 2003 Mar;26(1):231-72.
 29. Cooper C, Livingston G. Intervening to reduce elder abuse: challenges for research. *Age Ageing*. 2016;45(2):184-5.
 30. Kar N. Elder abuse: a major public health problem. *J Geriatr Care Res* 2016, 3(2): 25-26
 31. Dubey MJ, Ghosh R, Chatterjee S, Biswas P, Chatterjee S, Dubey S. COVID-19 and addiction. *Diabetes Metab Syndr Clin Res Rev*. 2020 Sep 1;14(5):817-23.
 32. Rout N. Risks to the elderly during the coronavirus (COVID-19) pandemic 2019-2020. *J Geriatr Care Res*. 2020, 7(1): 27-28.
 33. Ansary AM, Martinez JN, Scott JD. The virtual physical exam in the 21st century. *J Telemed Telecare*. 2019 Nov 6:1357633X19878330.
 34. Bhadani KH and Tripathy S. Clash between traditions and economy in geriatric care in India: Observations from a tertiary care hospital. *J Geriatr Care Res*. 2017, 4(1): 11-12.
 35. Gibbs LM. Understanding the medical markers of elder abuse and neglect: physical examination findings. *Clin Geriatr Med*. 2014 Nov;30(4):687-712.

Review

Approaches to reduce the incidence of cognitive decline and dementia

David Jolley

Abstract

The health of older people is of importance in all countries of the world. Life expectation is increasing most markedly in low and middle income countries so that the number and distribution of older people is expanding. Dementia is an age related condition, rare before the age of 60, but affecting 30% of people in their late eighties and beyond. It is a syndrome with a range of aetiologies, which leads to dependency, cost of care and early death. Despite investments in recent years there is, for most cases, no magic medicinal treatment which will arrest or improve the life-course of dementia once it is established. It is now understood that certain risk factors make it more likely that individuals will develop dementia. The Lancet Commission has recently reviewed these, identifying twelve factors which are potentially remediable with the possibility of reducing worldwide incidence of dementia by up to 40%. In addition enlightened approaches to care - 'tertiary prevention' - can reduce the burden of adverse symptoms and have been associated with increased life expectation for people with dementia. These factors are reviewed here.

Key words

Age, Dementia, Incidence, Prevention, Risk Factors

Introduction

The motivation for clinicians working in the field of mental health of older people from the 1970s onwards has been to improve services and treatment for older people with psychiatric disorders, including dementia. The task has been focussed on people who have developed, often quite severe or advanced mental illnesses. This has been extended in association with the scientific community to gain a better understanding of the nature of these conditions, including factors which lead them to occur, as well as to search for approaches which might reduce their incidence or resolve their symptoms.^{1,2}

The number of people living into old age (60 years +) is increasing as survival into late life is achieved by more: there were 962 million aged 60+ by 2017, two thirds living in Low and Middle Income countries (LMIC).³

A proportion of older people begin to show impairment of cognition, an estimated 46.8 million people world-wide, have dementia. By 2050 it is predicted it will be over 150 million. Great age is the strongest predictor of having dementia. The prevalence varies between communities but everywhere it is age related. In the UK a rough estimate is that 2% in their early 60s have dementia of some sort and degree, rising to 5% in the early 70s, 10% in the early 80s and 30% amongst 90 year olds.⁴

Most research has been conducted in High Income Countries where the expectation of survival into late life has been long established. Yet the majority of older people, at risk of dementia live now in LMIC. This will become more so in the years ahead. Professor Martin Prince and his colleagues established a research programme to address this mismatch: 10/66 – ten percent of publication about older people, coming from the 66 percent of the world population in LMIC. They have produced assessment tools which are not biased by education, literacy or numeracy and established that dementia is found in all communities – prevalence varies from 4.8% in rural China to 12.6% in Cuba.⁵

Dementia is characterised by impaired memory, loss of communication skills and loss of the ability to do things. It is a major cause of disability, dependency on others and shortens life expectation. It is costly for individuals, for families and for society. It is said that amongst middle aged and older people dementia or Alzheimer's disease is more feared than cancer.⁶

Risk factors for dementia and prospects for primary prevention

Genetic factors account for some cases of dementia, particularly amongst relatively young people, but inheritance is important in only 1% of cases of Alzheimer's disease and vascular dementia. Their contribution is greater for frontotemporal dementia and Huntington's chorea and other rare conditions. This means that for 99% of dementia we look to other factors which contribute to its development.

An important and influential review by The Lancet Commission published in 2017 and updated in a publication 2020 has identified twelve modifiable risk

factors.^{7,8} These papers have reviewed articles which achieve a high standard and include systematic reviews and meta-analyses. It is accepted that there will be other modifiable factors identified by research in the future; the current twelve are given in the Box 1.

Box 1: Modifiable risk factors for dementia	
1.	Less education
2.	Hypertension
3.	Hearing impairment
4.	Smoking
5.	Obesity
6.	Depression
7.	Physical inactivity
8.	Diabetes
9.	Low social contact
10.	Excess alcohol
11.	Traumatic brain injury
12.	Air pollution
Based on Lancet Commission. ^{7,8} Sl 1-9 were listed in 2017; sl 10-12 were added in 2020.	

It is estimated that these risk factors contribute 40% to the incidence of dementia. This raises the prospect that attention to them could reduce the incidence by that amount. The potential for corrective action is greatest in LMIC and amongst the poorest and most deprived.

People with dementia have more health problems than age, gender, ethnicity and social circumstance matched controls. They have more admissions to hospital than age, gender, ethnicity and social circumstance matched controls and are more likely to develop delirium when ill. They have a reduced life-expectation and have died more often of COVID-19 than age, gender, ethnicity and social circumstance matched controls. Modelling in the UK predicts the years ahead will include more old people who are well and independent, but also more with complex care needs.

Life course model of dementia genesis

The Lancet Commission presents a life course model of dementia genesis.⁷ A summary of the identified factors associated with dementia are discussed below.

Education: Education in childhood and beyond builds on the cognitive reserve of an individual. Lack of education leaves neurobiological development of the brain incomplete and vulnerable to the development of pathologies later in life. Involvement with a full education is powerfully associated with well-developed cognition and with resilience in the face of stress, including neuropathology – so reducing the likelihood of dementia.

Physical health: Maintenance of good physical health through life has a positive and protective effect on cognition. If neuropathology begins to develop, people who remain physically fit and active show less deterioration.

Exercise: Exercise has positive effects via weight loss and reduced likelihood of diabetes, and the production of

‘feel good’ emotions. Taking into account differences in age, generation, morbidity, gender, social class and culture, observational studies confirm that exercise improves normal cognition and reduces the incidence of dementia.

Maintenance of cognitive activity: People who read, play games or are involved with betting in middle age and later life, have a lower incidence of dementia.

Poverty and inequality stunt the growth of cognitive abilities and make the development of dementia more likely and more rapidly progressive.

Smoking and air pollution have toxic effects within the body and brain, mainly via the vascular system.

Retirement is associated with a drop in cognitive function. More demanding jobs sustain cognition and staying in work for more years is associated with retained cognitive ability. It is not clear that marketed computer programmed cognitive training programmes are effective.

Loss of hearing: People with hearing impairment in middle age and beyond are more likely to develop dementia; if they use a hearing aide, this reduces the effect.

Traumatic Brain Injury (TBI) has now been demonstrated to predict development of dementia. Mild TBI equates to concussion, severe TBI will include fractured skull, cerebral oedema, brain injury or bleeds. Severe TBI is associated with widespread hyper-phosphorylated tau.⁹ Common causes include road traffic accidents and sports injuries. There is currently great awareness of the damage associated with recurrent head trauma in professional soccer and other contact games.

Hypertension: the Framingham Studies demonstrated that a systolic blood pressure above 140 mm Hg in middle age predicted higher incidence of dementia. Control to below 120mm Hg reduces the incidence. But a Cochrane Review found no evidence that statins or aspirin in late life reduced the incidence of dementia.

Diabetes: Type 2 diabetes increases the incidence of dementia. It is not clear whether good control of diabetes is protective of deterioration in cognition.

Combined effects of cardiovascular risk factors: Using a scoring scheme which takes into account smoking, diet, physical activity, BMI, fasting blood glucose, cholesterol and blood pressure; low scores are associated with low incidence of dementia. High scores relate to reduced whole brain volume and to hippocampal atrophy.

Excessive alcohol: Heavy drinking (four drinks per day for men, three drinks per day for women) is associated with brain shrinkage, cognitive decline and a threefold increase in the incidence of dementia. Moderate drinkers have a slightly lower incidence of dementia than abstainers.

Obesity and weight control: Being obese – BMI equal or greater than 30 – is associated with a higher incidence of

dementia, but simply being overweight is not. Losing weight in middle age by diet improves attention and memory.

Smoking: Smokers have a higher incidence of dementia, which falls when they stop smoking, even in later life. It is not known if passive smoking leads to more dementia.

Depression: There is a complex relationship between dementia and depression. Depression may be mistakenly diagnosed as dementia. An episode of depression may be followed by a developing dementia. Depression may occur during the course of dementia. Treating depression in the presence of dementia is difficult. It is not known whether effective treatment of depression is protective against dementia.

Social contact: Low social contact is associated with more dementia. Cohabitants have a lower incidence of dementia than people who are long-term single or widowed.

Air pollutants: Exposure to nitrogen dioxide, carbon monoxide and/or particulate matter, as in traffic - is associated with more dementia.

Sleep: Less than five hours sleep per night, or more than eight hours sleep are associated with higher incidence of dementia

Diet: Studies of individual components of diet: vitamins, high plant content (Mediterranean or Nordic) do not show convincing evidence that they reduce the incidence of dementia.

Estimates of the contribution of factors to the genesis of dementia

Various estimates of the contribution of factors to the genesis of dementia have been proposed along with the potential for reducing incidence of dementia if they are addressed. **Population Attributable Fraction (PAF)** is a concept which gives a value to the effect there would be on incidence of a disease, if the actual status of a factor at present were returned to an average population level. This can be used to estimate benefits which might be attained by improved conditions within the dimension of one factor.¹⁰ **Communality** is a measure of how much of the impact of one factor overlaps with others.¹¹

Some recent considerations

Biomarkers: There is interest in looking for changes amongst people who may develop dementia but are clinically normal.

Scans: Dementia is signified by loss of brain volume, reduced size of the hippocampus, entorhinal cortex and medial temporal cortex. Scans are costly and are not justified outside a research context.

Molecular markers: In blood or cerebrospinal fluid, amyloid beta and tau biomarkers can be identified amongst people with no clinical evidence of dementia.

Research does not find their presence predicts development of the clinical syndrome.

Plaques can be seen in 3% of normal people aged 50-59, but in 40% of people aged 80-89. Amyloid imaging is therefore not a diagnostic test for dementia. If it is negative it certainly rules out Alzheimer's disease. If it is positive the subject may be normal or have Alzheimer's disease.

Whole population screening for dementia produces no advantage but may do no harm.

LATE – Limbic predominant, Age related TPD-43 Encephalopathy: A newly recognised fairly common dementia in very late life: LATE – Limbic predominant, Age related TPD-43 Encephalopathy is a condition quite recently identified. It affects mainly people in their 80s and older, is a milder, more slowly progressive condition with sclerosis of the hippocampus seen at post-mortem.¹²

Multi-domain interventions: These interventions including diet, physical exercise and cognitive training do seem to be useful especially in the 65-76 age group and with people who have been most educationally deprived.

'Tertiary' prevention: The concern thus far has been with primary or secondary prevention of dementia, by recognising and addressing factors which relate to the incidence of dementia. There remains value in reducing the impact of established dementia on the lived experiences of individuals and families, and the demand and cost of services

Medication: Cholinesterase inhibitors have a useful but modest impact on progress of cognitive decline and useful activities. They are no longer funded in France as they are deemed to be not cost-effective.

Neuropsychiatric symptoms

These can be helped by low dose antipsychotics (but beware of unwanted effects) and tailored activities. Non-drug therapy is not effective for **psychotic symptoms**. These can be helped by low dose antipsychotics (but beware of unwanted effects). Other medications such as tranquillisers or antidepressants are being widely prescribed because of directives not to use antipsychotics. They do not work but they do have high levels of death, falls and hospital admission. **Depression** is not easily treated in dementia. **Agitation** has mostly been investigated in care homes, tailored activities can be effective. There is no medication which is useful for **apathy**. Tailored activities are effective. Hypnotics are not effective for **sleeplessness** and are associated with falls, hospital admissions and death. Diet and tailored activities are the best option. There is evidence that cognitive rehabilitation delivered to individuals (not groups) can produce useful improvements in functioning.

Carers

Identifying carers and their needs, including education and support of distressed carers can reduce their symptoms and reduce the cost to services.

Comorbidities and related points

Comorbidities: Comorbidity is common in dementia. Almost 70-80 percent of people with dementia seen in primary care have two or more other pathologies, identification and treatment of these is always worthwhile. Recently COVID-19 is sweeping the world. It has preferentially attacked older people, particularly those with dementia, who are suffering the highest death rates.

Delirium: It is often seen as a complication of dementia. Delirium arising de novo may be followed by a subacute syndrome of progress to dementia. Approaches to reduce the incidence of delirium in hospital are recognised.

Hospital admissions: Older people with dementia, especially if living alone, are more liable to admission to hospital than are others with similar physical illnesses. In hospital they do not do well. They are more prone to delirium and falls, stay longer in hospital, are more likely to die or to be discharged to a care home. All these phenomena are unhappy for the individual and family and a source of unease and expense to the services. Approaches to better care at home are valued. Specialised liaison services have been found to improve outcomes and reduce costs.

Frailty: The mental frailty of dementia is often associated with physical frailty and the associated dependency and vulnerability to additional illnesses.

End of Life: Dementia is now confirmed to be the most common cause of death in High Income countries under normal circumstances. The last weeks of life with dementia may be difficult – complicated by pain, agitation, physical dependency, and loss of weight, difficulty with feeding and hydration, and vulnerability to infections. There is increasing awareness of the advantage of a palliative approach to modify symptoms. Hospices can play a very helpful role within the spectrum of services.¹³

The best of news

Good news is that follow up studies in the UK and elsewhere have begun to find that the incidence of dementia using exactly matched methodology in successive cohorts is falling. Cognitive Function and Ageing studies one and two 1989 – 1994 and 2008-2011 found a 20% drop in incidence in the three centres – Nottingham, Cambridgeshire and Newcastle. The drop was most marked in men where it was almost 50% in some age bands. The lowering of incidence found in Nottingham and Cambridgeshire was not matched in Newcastle where the measure rose a little. This difference is probably related to the socio-economic conditions; Newcastle experienced more difficulties and loss of employment.¹⁴ Overall the incidence of dementia fell in the least and moderately deprived areas and rose in the most deprived areas. This is not a controlled experiment but a careful report of a naturalistic change. It seems probable that improvement in many of the 12 factors (Box 1) will have played a part in achieving a pooled effect. It

is tempting to believe that general improvement in socio-economic circumstance and a move toward equality will have benefits

In summary, compared with the state of knowledge in 1970s we have come a long way. There is now a better understanding of the nature and complexity of dementia and its distribution throughout the world. Factors have been identified by rigorous research, which increase the likelihood that individuals will develop dementia. Many of these are potentially remediable - a sober estimate is that if these are fully addressed, incidence of dementia will fall by 40%. We are already seeing that incidence is falling in some countries where socio-economic circumstances and health care are best developed.

The Lancet Commission summarises these findings and suggests an effective strategy to reduce the incidence of dementia worldwide. Life-long education has the potential to reduce incidence by 7%. Identifying and correcting hearing loss could reduce incidence by 8%, smoking by 5%, depression and social isolation by 4% each, traumatic brain disease by 3%, hypertension, physical inactivity, and air pollution by 2% each, alcohol excess, obesity and diabetes can reduce dementia incidence by 1% each.⁷

Conclusion

Compared with the situation in the 1970s this is a position of hope: a better understanding of the nature and aetiology of conditions which produce dementia means that primary preventive measures can be taken which could reduce the incidence of dementia, with all the personal and societal costs associated with it, by something like 40%. Although there is limited benefit to derive from anti-dementia medication, there is much which can be done to improve the experience of life with dementia, for individuals with the condition and those who care for them – a tertiary prevention strategy.

Acknowledgement

This review article was originally prepared for and presented at the 'Healthy Ageing 2020' –International Conference, organised by GeriCaRe (Geriatric Care and Research Organisation) on August 8th 2020.

Author information David Jolley, MSc, MBBS, FRCPsych, Honorary Reader in Psychiatry of Late Life, Social Care and Society, The University of Manchester, Ellen Wilkinson Building, Oxford Road, Manchester, M15 6JA, United Kingdom, Email: David.jolley@manchester.ac.uk and dessjol@yahoo.co.uk ORCID: 0000-0001-5534-5637

Correspondence: David Jolley, 29 Oldfield Road, Altrincham WA14 4EQ, UK, Email: David.jolley@manchester.ac.uk and dessjol@yahoo.co.uk

Competing interests: None.

Received: 6 August 2020; **Revised:** 21 August 2020; **Accepted:** 22 August 2020

Copyright © 2020 The Author(s). This is an open-access article distributed under the terms [CC BY-NC] which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Citation: Jolley D. Approaches to reduce the incidence of cognitive decline and dementia. *Journal of Geriatric Care and Research* 2020, 7(3): 108-112.

References

1. Hilton C. Improving psychiatric care for older people. Switzerland: Palgrave; 2017.
2. Hilton C. Psycho-geriatrics in England. *Medical History* 2016, 60(2): 206-228.
3. World Health Organisation. [Internet] Global Health and Ageing. [cited 220 Aug 7] Available at https://www.who.int/ageing/publications/global_health.pdf?ua
4. Alzheimers Research UK. [Internet] Dementia Statistics Hub. [cited 220 Aug 7] Available at <https://www.dementiastatistics.org/statistics/prevalence-by-age-in-the-uk/>
5. Prina A, Mayston R, Yu-Tzu Wu and Prince M. A review of the 10/66 research group. *Soc Psychiatr Epidemiol* 2019 54 (1):1-10.
6. NHS. [Internet] Symptoms of dementia. [cited 220 Aug 7] Available at <https://www.nhs.uk/conditions/dementia/symptoms/>
7. Livingston G, Huntley J, Sommerlad A, Ames D et al. Dementia prevention, intervention and care: 2020 report of the Lancet Commission. *The Lancet Commissions*. 2020, 396 (10248) 413-446. [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)30367-6/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30367-6/fulltext)
8. Livingston G, Sommerlad A, Orgeta V, Costafreda S et al. Dementia prevention, intervention and care. *Lancet Commissions*, 2017, 390 (10113): 2675–2734. [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(17\)31363-6/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(17)31363-6/fulltext)
9. Castellani RJ, Perry G. Tau Biology, Tauopathy, Traumatic Brain Injury, and Diagnostic Challenges. *J Alzheimers Dis*. 2019;67(2):447-467. doi:10.3233/JAD-180721
10. World Health Organisation. [Internet] PAF – Population Attributable Fraction. [cited 220 Aug 7] Available at https://www.who.int/healthinfo/global_burden_disease/metrics_paf/en/
11. Statistics How To. [Internet] Communal. [cited 220 Aug 7] Available at <https://www.statisticshowto.com/communality/>
12. Nelson PT, Dickson DW, Trojanowski JQ, et al. Limbic-predominant age-related TDP-43 encephalopathy (LATE): consensus working group report [published correction appears in *Brain*. 2019 Jul 1;142(7):e37]. *Brain*. 2019;142(6):1503-1527. doi:10.1093/brain/awz099
13. Regan A, Tapley M, Jolley D. Five years' experience of a hospice service for people with dementia. *J Geriatr Care Res* 2018, 5(2): 73-78.
14. Matthews, F., Stephan, B., Robinson, L. et al. A two decade dementia incidence comparison from the Cognitive Function and Ageing Studies I and II. *Nat Commun* 7, 11398 (2016).<https://doi.org/10.1038/ncomms11398> <https://www.nature.com/articles/ncomms11398>

Review

Promotion of dementia-friendly communities and extension of healthy life expectancy

Yohko Maki, Minako Mori

Abstract

Promotion of age- and dementia-friendly communities can be one of the approaches to improve the social determinants of healthy life expectancy, since age- and dementia-friendly environments allow older people, including those with dementia, to manifest their potential capacities. Improving social systems and eliminating social disparities are fundamental necessities, while it is also important to identify actions that can be taken by individuals. Top-down administrative policy and bottom-up voluntary approaches can work complementarily. Voluntary initiatives should be inclusive for the vulnerable, as well as being co-beneficial, sustainable, and low cost, allowing the initiatives to expand to low-income countries. Small actions that can be implemented immediately should be taken to make the society dementia-friendly through individual efforts.

Key words

Age, Community, Dementia, Dementia-Friendly Community, Healthy Life Expectancy, Longevity

Table 1: Life expectancy at birth and at age 60 years in India and Japan

	India	Japan	Difference
Life expectancy at birth (2016)			
Male	67.44	80.98	13.54
Female	70.34	87.14	16.8
Life expectancy at age 60 years (2016)			
Male	17.24	23.67	6.43
Female	18.8	23.51	4.71
Probability of dying before 5 years of age (per 1000 live births, 2018)	37	2	35
Probability of dying between 15 and 60 years, m/f (per 1000 population, 2016)	214/138	65/36	149/102
Life expectancy at birth and at age 60 years in India and Japan in 2016. ^{2,3} The difference in life expectancy at birth is larger than that at age 60 years; it is possible that the probabilities of dying before 5 years of age and that of dying between 15 and 60 years are related to these differences.			

Introduction

Extending life expectancy is an ongoing issue in the health policy of every country, while at the same time, many countries are exploring approaches to address the issue of the unprecedented ageing of the society. In recent years, the focus has shifted from simply extending life expectancy to extending healthy life expectancy. Healthy life expectancy is defined as “a form of health expectancy that applies disability weights to health states to compute the equivalent number of years of good health that a newborn can expect.”¹

How should life be spent as an older adult? How should we approach an ageing society? These questions are common to all countries and are not limited to the ones with greater longevity. For example, compared to Japan, India's average life expectancy at birth in 2016 was lower by 13.5 years for males and 16.8 years for females, while the life expectancy at the age of 60 years decreased to 6.4 years for males and 4.7 years for females^{2,3} (Table 1).

With regard to healthy life expectancy at 60 years of age, the difference between the two countries in 2015 was 6.4 years for males and 9.5 years for females, with the difference staying around the same level since 2000 (Table 2).⁴ As the period between life expectancy and healthy life expectancy, which is a long period characterised by poor health, may decrease the quality of life of an individual and increase social burden, such as medical costs and social welfare costs, focus should be on extending healthy life expectancy, not merely life expectancy.

This paper emphasises that since humans are physical-psycho-social beings, extending healthy life expectancy should not only focus on the physical aspect but also include the psychosocial aspect. From this perspective, pro-social and altruistic activities may lead to the extension of healthy life expectancy, including the enhancement of the psychosocial aspects.

Table 2: Healthy life expectancy at birth and that at age 60 years between 2000 to 2015

A. Healthy life expectancy at birth		2000	2005	2010	2015
Male	India	53.6	55.3	57.2	58.4
	Japan	69.9	70.6	71.4	72.4
	Difference	16.3	15.3	14.2	14.0
Female	India	53.4	55.2	57.6	59.5
	Japan	75.0	75.7	76.2	76.8
	Difference	21.6	20.5	18.6	17.3
Total	India	53.5	55.3	57.4	58.9
	Japan	72.5	73.2	73.8	74.7
	Difference	19.0	17.9	16.4	15.8
B. Healthy life expectancy at age 60 years		2000	2005	2010	2015
Male	India	11.0	11.5	12.1	12.4
	Japan	16.9	17.3	17.9	18.8
	Difference	5.9	5.8	5.8	6.4
Female	India	11.9	12.2	12.7	13.2
	Japan	21.4	22	22.4	22.9
	Difference	9.5	9.8	9.7	9.7
Total	India	11.5	11.8	12.4	12.8
	Japan	19.3	19.8	20.3	20.8
	Difference	7.8	8.0	7.9	8.0
There seems to be a decreasing tendency in the difference between the two countries in healthy life expectancy at birth from 2000 to 2015, while there is no such tendency in healthy life expectancy at age 60 years from 2000 to 2015.					

Determinants of health

In order to extend healthy life expectancy, approaches that address the determinants of health are effective. Determinants of health include functional and structural factors, such as age and genetic factors as core elements, which are non-modifiable. However, they also include modifiable factors related to lifestyle, such as nutrition and exercise. Considering that addressing these modifiable factors can be effective for extending life expectancy, most recent discussions on frailty prevention have revolved around nutrition and exercise. Furthermore, determinants of health include social factors.

According to the World Health Organization (WHO), “social determinants of health are the conditions in which people are born, grow, live, work, and age”. Furthermore, “these circumstances are shaped by the distribution of money, power and resources at global, national and local levels. The social determinants of health are mostly responsible for health inequities – the unfair and avoidable differences in health status seen within and between countries.”⁵

Social issues create health disparities, and the elimination of inequality remains a global issue. However, these issues cannot be solved instantly or only by individual efforts. Rather than just waiting for global issues to be solved, it is important to identify modifiable factors that can be changed through individual effort, and desirably without incurring costs.

What are the modifiable social determinants of health? The Office of Disease Prevention and Health Promotion in the United Nations classifies social determinants of health into five domains: education, economic stability, neighbourhood and built environment, health and health care, and social and community context.⁶ Among these classifications, health and health care systems are the issues that should be tackled by society as a whole and cannot be changed through individual efforts alone. Furthermore, education and economic stability are difficult to alter once an individual reaches middle age. In contrast, neighbourhood and built environment, and social and community context can be influenced by individual efforts. Indeed, the environment includes various elements such as public hygiene, which cannot be changed by individuals; however, it also includes elements such as social relationships that can be changed through individual efforts without incurring costs.

Building an age- and dementia-friendly community

As a modifiable social determinant of health, promoting an age- and dementia-friendly community can be related to the extension of healthy life expectancy. According to the World Report on Ageing and Health in 2015, the WHO stated that “physical and social environments are powerful influences on Healthy Ageing”; and that “age-friendly environments allow older people to be and to do what they have reason to value by enabling them to maximize both their capacity and their ability”.⁷

Originally, age- and dementia-friendly communities developed separately by different initiatives, but recently there has been a tendency to integrate age- and dementia-friendly initiatives to complement each other.⁸ Considering dementia as a disease, it is a spectrum disorder⁹ where the individual's function deteriorates. From this perspective, it makes sense to consider age- and dementia-friendly environments collectively. According to the WHO, older adults and people with dementia are greatly influenced by environmental factors in terms of their functional manifestation. Therefore, promoting age- and dementia-friendly environments can be one approach to address the social determinants of health. Furthermore, the WHO adds that “creating environments that are truly age-friendly requires action in many sectors – health, long-term care, transport, housing, labour, social protection, information and communication – by many actors – government, service providers, civil society, older people and their organizations, families, and friends”.⁷ Therefore, it may be desirable for older adults to participate in the promotion of age- and dementia-friendly communities. Moreover, it is also important for people with dementia to participate according to their abilities.

Since 2005, the Dementia Supporter Program, a volunteer training programme to support dementia patients and their families, has been promoted with the aim of creating a dementia-friendly community in Japan.¹⁰ In the United Kingdom, Dementia Friends was launched since 2013 and has been expanded to various countries, including India.¹¹ The common goal of both the programmes is to take small initiatives that can be implemented immediately and to make the society more dementia-friendly by tapping the potential of individual efforts.¹¹

Both Dementia Supporter and Dementia Friends programmes are thought to have four important characteristics: respect for diversity, reciprocity, bottom-up approach, and low cost.

1) Originally, a movement that encompasses diversity

Age- and dementia-friendly movements must also consider age and dementia as types of diversity to build an inclusive society. This does not mean that preference should be given only to age and dementia. In fact, there are various vulnerable people in society, and the idea is to include all who are vulnerable in society as a whole. All people who continue living will eventually become older adults, at risk of dementia. With this in mind, dementia is an imminent disorder that may develop in anyone. Looking at the origins of age- and dementia-friendly communities, future developments must strive to create a more diverse society by expanding the inclusion of all socially vulnerable people.

2) Co-benefit

From the perspective of social sustainability, a society that embraces diversity is beneficial for both supporters and recipients. The WHO Geriatric Report 2015⁷ introduces the Experience Corps¹² as a real-life example of altruistic behaviour. Experience Corps is an initiative in which middle-aged and older adults assist school children in learning, for example, tutoring children whose learning is delayed, such as immigrant children with poor understanding of English, and supporting in libraries. This initiative can also be considered an age-friendly attempt to provide middle-aged and older adults with significant social roles and opportunities rather than being treated as care beneficiaries and social care recipients. This initiative has benefited both sides: for school children, an increase in academic abilities and learning motivation, and for the volunteers, an increase in physical strength and capacity,^{13,14} improved cognitive function,¹⁴ improvements in social networks,¹⁴ and fewer depressive symptoms.¹³ In addition, positive impacts on parents, the entire school, and the entire community have also been reported.

Benefitting everyone involved is one of the highlights of Experience Corps. It is an age-friendly attempt to improve the functions of older adults^{13,14} by engaging them in altruistic activities. Supporting children in learning is a child-friendly activity, and at the same time, it is parent-friendly, family-friendly, and school-friendly, positively impacting the entire community. It may not be considered age-friendly if the benefits for the older people are

brought at the expense of other residents, including children. Such activities can result in the division of society and generations, and are not sustainable. The example of Experience Corps suggests the benefits of engaging in altruistic activities. Being altruistic is an innate desire for people,¹⁵ and altruistic acts have been reported to increase motivation as a social reward.¹⁶ It has been reported that, even in the care of persons with dementia, ‘giving’ is considered as a form social reward for caregivers.¹⁷ The WHO Geriatric Report 2015 has also highlighted the importance of further considering the meaning of altruistic behaviour as a dementia prevention activity.⁷

For people with dementia, it is desirable to have social roles according to their abilities, rather than simply receiving care. In reality, it is rather difficult for them to take full responsibility in real life situations, so it is also recommended to set up a specific dementia-friendly environment, such as a dementia café. In Japan, people with dementia are encouraged to have some social roles to play in dementia cafes in order to be actively involved.

3) An approach to empower bottom-up activities from grassroots and society

Along with administrative health policies, an empowerment approach can also be effective in supporting the voluntary activities of citizens.

According to the WHO Ottawa Charter, “health is, therefore, seen as a resource for everyday life, not the objective of living”.¹⁸ Therefore, healthy longevity is a resource that enriches people’s lives rather than a goal. The Ottawa Charter further emphasises that “health is a positive concept emphasizing social and personal resources, as well as physical capacities. Therefore, health promotion is not just the responsibility of the health sector, but goes beyond healthy life-styles to well-being”.¹⁸ Top-down administrative policies may tend to emphasise numeral performance indicators, such as the number of registered people as dementia supporters as a performance indicator. However, too much emphasis on pursuing numerical goals can result in a fall by placing the means as an objective. Voluntary bottom-up activities can be complementary to top-down administrative policies by paying attention to psychosocial factors.

Moving forward, ageing problems will eventually manifest in all countries. It is important to improve the wellbeing of all citizens, including older adults, without setting healthy life expectancy as a personal objective. The activities of Dementia Supporter and Dementia Friends can be good initiatives to improve the wellbeing of entire communities through autonomous and voluntary co-operation.

4) Low-cost or no-cost sustainability

Low cost is an important advantage for sustainability. The United Kingdom is actively expanding the Dementia Friends programmes to low- and middle-income countries. This system can be maintained at a low cost and is expected to further expand in the future.

Health counsellor system

It is pertinent to introduce the health counsellor system that has contributed to health longevity in Japan. Currently, Japan is well developed in terms of health, but the Japanese people in their 70s or older in 2020 are those who spent their childhood before, during, and after the turmoil of World War II. Before the war, Japan was poor, so the older people of today did not receive sufficient nutrition or have an adequate public health environment while growing up. Furthermore, during the war and post-war years, supplies were lacking, society was impoverished, and nutrition and public health conditions continued to be poor.

The health counsellor system began voluntarily in the 1940s. During this period, housewives witnessed the struggles of public health nurses in encouraging rural villages to tackle issues such as improving public health and reducing infant mortality rates. This system began when housewives voluntarily started calling for activities to help in whatever way they could. Activities officially started in 1945, four months before the defeat of Japan at war, when Japan was the most deprived, and the rural areas were completely exhausted.

After the war, rural areas had poor public health for a long time and life expectancy was low. However, health counsellors persevered steadily in their activities. For example, in the prefecture with the greatest number of strokes, public health nurses and health counsellors conducted surveys on winter room temperature and salt content in food in 1971. Based on these surveys, activities were carried out to improve the living environment and nutrition of the residents. As the educational standards were not high in the rural areas at that time, accurate knowledge was conveyed to people who were not well educated. Health counsellors, who were people without medical qualifications, were the ones to develop devices to put knowledge into practise. Although health counselling started as a voluntary activity, the national and local governments in Japanese later organised it into a system.

What is remarkable about this activity is not the task-shifting of medical-led training, but the proactive and voluntary activities initiated by residents, which was later supported by policies. The health counsellors also voluntarily learned to assist public health nurses and to educate citizens. In addition, they voluntarily made efforts to encourage behavioural changes in citizens. Health counsellors are still active in Japan and are organised by the local governments, while what is worthy of notice is that this system was born independently of top-down policies.

At present, Japan has a long life expectancy, but rather than its current social security system, Japan's history of community activities voluntarily initiated by citizens is crucial. Extending healthy life expectancy is important, but health care for older adults may get pushed back in

terms of priority in the context of policy during the prevalence of COVID-19. As medical resources may not be allocated for dementia during the current pandemic, rather than relying on policies, the importance of grassroots activities should be emphasised.

Evidence-based medicine review and research gaps

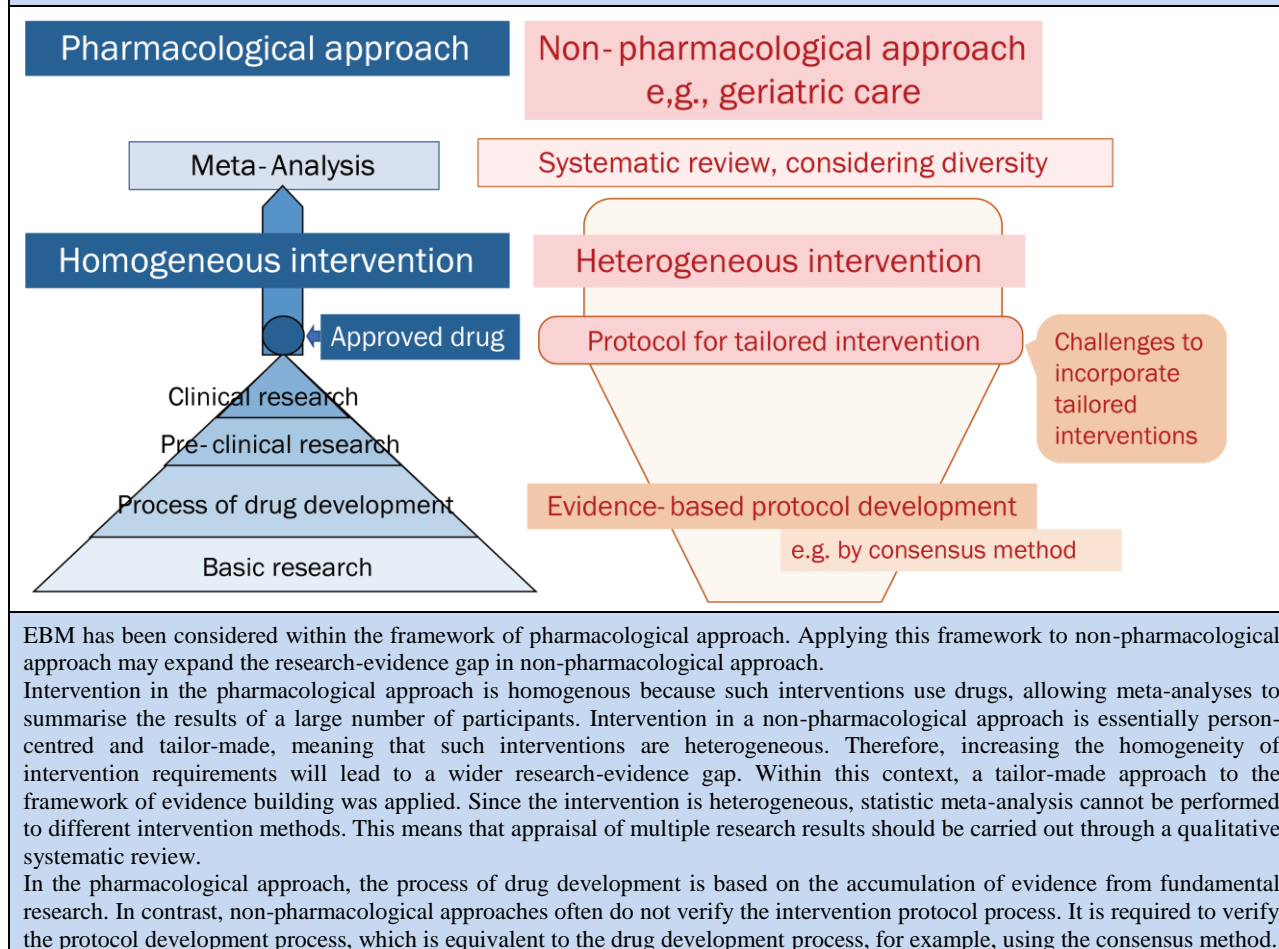
As the current emphasis is to promote evidence-based medicine, it is important to mention here the evidence supporting a non-pharmacological approach. Non-pharmacological approaches to dementia, including dementia care, promotion of dementia-friendly communities, and dementia prevention interventions are also recommended to be evidence based. Being evidence based is important, but imposing an emphasis on evidence without properly recognising the limits and scope of evidence poses the risk of expanding the research–practice gap. Considering that evidence-based medicine is aimed at improving practice, bending practice in order to conform to evidence is putting the cart before the horse.

To begin with, standardised methods cannot measure all ‘cognitive functions’ that deteriorate in dementia. In the fifth edition of the American Psychiatric Association's Diagnostic and Statistical Manual (DSM-5), Major Neurocognitive Disorder, which corresponds to dementia, is defined as “substantial impairment to be present in one or (usually) more cognitive domains”. Furthermore, “the impairment must be sufficient to interfere with independence in everyday activities”.⁹ Cognitive functions are classified into six domains, but methods for measuring all domains of cognitive functions have not been standardised. For example, the Mini Mental State Examination (MMSE) is regarded as one of the gold standards of cognitive function tests for dementia diagnosis. However, such a test with a total score of 30 points cannot evaluate the entirety of cognitive functions. Also, among the six areas, executive function and social cognition are difficult to objectively measure and quantify.

In the standardised tests for medical treatment, methods are objectively established, and reproducibility is required. This means that the same result must be obtained regardless of how many times and how many different people conduct the test. However, executive function and social cognition are not one-sided manifestations of abilities, but are the abilities to interact with the environment, including other people, by influencing them. This interactive nature makes one-sided objective measurements difficult.

As the brain itself interacts with the environment, standardised tests such as the MMSE have a limited capability to measure cognitive functions. Therefore, it is important to be aware of the limitations and scope when considering evidence measured by standardised cognitive tests. In other words, standardised cognitive function tests do not assess the entirety of cognitive functions.

Fig 1: Applying evidence-based medicine (EBM) framework to non-pharmacological approach may expand the research-evidence gap.



Furthermore, it is necessary to reconsider the evidence of a non-pharmacological approach for dementia¹⁹ (Figure 1). There is no reported robust evidence in non-pharmacological approaches for dementia. Thus, the importance of strictly constructing the methodology of interventions has been emphasised. The framework of evidence was originally constructed for pharmacological approaches, which have homogeneous interventions using approved drugs. However, the non-pharmacological approach is essentially person-centred, which means that fundamentally, it is an individualised approach. Thus, intervention is essentially tailor-made according to the individual. Although tailor-made pharmacological therapy has been developed, conventional pharmacological therapy remains homogeneous using approved drugs for all. As for non-pharmacological intervention, seeking the homogeneity of intervention based on the framework of pharmacological intervention may impair the essence of non-pharmacological approaches and lead to the expansion of the research-practice gap. Originally, the purpose of evidence-based medicine (EBM) was to improve practise. Therefore, introducing tailor-made interventions into non-pharmacological research is being seen as a challenge that aims to bring research (evidence) closer to practise. This approach is the opposite of seeking homogeneity of intervention and is a challenge consistent with the essence of non-pharmacological approach. Furthermore, in the framework of EBM, the highest level

of evidence is the result of a meta-analysis of statistical processing and evidence. However, statistical processing assumes homogeneity of intervention. Meta-analysis should not apply to tailor-made interventions, as they are heterogeneous. Therefore, qualitative systematic reviews should be used to summarise the results of such interventions. Within this context, the framework of evidence should be reviewed in non-pharmacological approaches.

The issue to be considered regarding the non-pharmacological approach is the process corresponding to drug development, which is constructed by the accumulation of evidence from basic researches to clinical studies. The verification of the corresponding process in the non-pharmacological approach has been neglected to date. For example, both music therapy performed by a qualified music therapist and that by an untrained layman who has not learned music therapy, are considered to be same 'music therapy' in meta-analysis. It is evident that the efficacy is influenced by the therapists' skill and methodology, making it important to appraise these factors. Therefore, building evidence for the non-pharmacological approaches is necessary to verify the process, corresponding to the process of drug development in the pharmacological approaches. One proposal is to verify the methodology and intervention protocol using consensus methods. In addition, it is

important that the protocol contain evaluation of the therapists' skills or training programme.

Conclusion

It is not sufficient to simply view the extension of life expectancy from the viewpoint of an individual organism. Human beings are not merely physical organisms but also psychosocial beings. Therefore, the real issue is extending healthy life expectancy (life expectancy with good health), which includes the psychosocial aspect.

Modifiable social determinants of health should be tackled when considering the extension of healthy life expectancy. The promotion of age- and dementia-friendly communities can be considered as an approach to address modifiable social determinants of health.

Medical care for older adults may become less prioritised during the COVID-19 pandemic. Furthermore, social distancing, which has been made essential by the pandemic, severely restricts social interaction, especially for the older persons. However, it does not mean that nothing can be done under the condition, and it is desirable to search for things that can be done within the present constraints and devise safe workarounds despite the ongoing pandemic. The long life expectancy in Japan can be related to innovations in rural areas that had suffered from poor public health. In India and other Asian countries, many things can be done even under these conditions, as regional connections and spiritual values are still alive.

Acknowledgement

The authors are grateful for the people with dementia and their family members who have inspired them. This research was supported by the National Center for Geriatrics and Gerontology (Research Project Number 30-26).

Content of this article was presented at the 'Healthy Ageing 2020' – International Conference, organised by GeriCaRe (Geriatric Care and Research Organisation) on August 8th 2020.

Author information Yohko Maki, PhD, National Center for Geriatrics and Gerontology, 7-430, Morioka, Obu, Aichi 474-8522, Japan, E-mail: makiyk@ncgg.go.jp; Minako Mori, Master of Music (MM), Toho Gakuen Graduate School, 1884-17 Kureha-cho Toyama-shi, Toyama 930-0138, Japan, E-mail: itsxx375@gmail.com

Correspondence: Yohko Maki, PhD, National Center for Geriatrics and Gerontology, 7-430, Morioka, Obu, Aichi 474-8522, Japan, E-mail: makiyk@ncgg.go.jp

Competing interests: None.

Received: 17 September 2020; **Revised:** 21 September 2020; **Accepted:** 21 September 2020

Copyright © 2020 The Author(s). This is an open-access article distributed under the terms [CC BY-NC] which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Citation: Maki Y, Mori M. Promotion of dementia-friendly communities and extension of healthy life expectancy. Journal of Geriatric Care and Research 2020, 7(3): 113-119.

References

1. World Health Organization. Healthy life expectancy (HALE) at birth [Internet]. Geneva: World Health Organization; 2020. [cited 2020 Sept 17]. Available from: https://www.who.int/gho/mortality_burden_disease/life_tables/hale_text/en/
2. World Health Organization. The global health observatory [Internet]. Geneva: World Health Organization; 2020. [cited 2020 Sept 17]. Available from: <https://www.who.int/data/gho>
3. Ministry of Health, Labour and Welfare. Life expectancy [Internet]. Tokyo: Ministry of Health, Labour and Welfare; 2016. [cited 2020 Sept 17]. Available from: <https://www.mhlw.go.jp/toukei/saikin/hw/life/life16/dl/life16-02.pdf> (in Japanese)
4. World Health Organization. Global Health Observatory data repository, Healthy life expectancy (HALE) Data by country [Internet]. Geneva: World Health Organization. [updated 2018 April 6; cited 2020 Sept 17]. Available from: <https://apps.who.int/gho/data/view.main.HALEXv?lang=en>
5. World Health Organization. About social determinants of health. [Internet]. Geneva: World Health Organization; 2015. [cited 2020 Sept 17]. Available from: https://www.who.int/social_determinants/sdh_definition/en/
6. Office of Disease Prevention and Health Promotion. Social Determinants of Health. [Internet]. Washington: the U.S. Department of Health and Human Services. [updated 2020 Sep 16; cited 2020 Sept 17]. Available from: <https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health>
7. World Health Organization. World report on ageing and health 2015. [Internet]. Geneva: World Health Organization; 2015. [cited 2020 Sept 17]. Available from: https://apps.who.int/iris/bitstream/handle/10665/186463/9789240694811_eng.pdf?sequence=1
8. AARP: American Association of Retired Persons. Better Together: Age-Friendly and Dementia Friendly Communities. [Internet]. Washington: AARP; 2016. [cited 2020 Sept 17]. Available from: <https://www.aarp.org/content/dam/aarp/livable-communities/livable-documents/documents-2016/Better-Together-Summary-Report.pdf>
9. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. 5th ed. Arlington, VA: American Psychiatric Association; 2013.
10. Dementia Supporter Caravan. Dementia Supporter. [Internet]. Tokyo: Dementia Supporter Caravan; 2020. [cited 2020 Sept 17]. Available from: <http://www.caravanmate.com/> (in Japanese).
11. Alzheimer's Society. Dementia Friends. [Internet]. Geneva: World Health Organization; 2020. [cited 2020 Sept 17]. Available from: <https://www.dementiafriends.org.uk/>

12. AARP: American Association of Retired Persons. Experience Corps. [Internet]. Washington: AARP; 2020. [cited 2020 Sept 17]. Available from: <https://www.aarp.org/experience-corps/>
13. Hong SI, Morrow-Howell N. Health outcomes of Experience Corps: a high-commitment volunteer program. *Soc Sci Med*. 2010; 71(2): 414–20.
14. Fried LP, Carlson MC, Freedman M, Frick KD, Glass TA, Hill J, et al. A social model for health promotion for an aging population: initial evidence on the Experience Corps model. *J Urban Health*. 2004; 81(1): 64–78.
15. Warneken F, Tomasello M. Altruistic helping in human infants and young chimpanzees. *Science*. 2006; 311(5765): 1301–3.
16. Lahvis GP. Social reward and empathy as proximal contributions to altruism: the camaraderie effect. *Curr Top Behav Neurosci*. 2017; 30: 127–157.
17. Inagaki TK, Haltom K, Suzuki S, Jevtic I, Hornstein E, Bower JE, et al. The neurobiology of giving versus receiving support: the role of stress-related and social reward-related neural activity. *Psychosom Med*. 2016; 78(4): 443–53.
18. World Health Organization. The Ottawa Charter for Health Promotion. [Internet]. Geneva: World Health Organization; 1986. [Cited 2020 Sept 17]. Available from: <https://www.who.int/healthpromotion/conferences/previous/ottawa/en/>
19. Maki Y. A reappraisal of the evidence of non-pharmacological intervention for people with dementia. *J Geriatr Care Res*. 2018; 5(2): 41–42.

Research article

Demographic and socio-economic differentials of quality of life of elderly people in rural Nepal

Mahendra Raj Joshi

Abstract

Background: Quality of life (QOL) is one of the central concepts in ageing research with an increasing elderly population worldwide. **Objective:** The main objective of this research paper is to assess the different levels of QOL of elderly population in different sociodemographic strata in the rural areas of Nepal. **Methods:** This is a cross-sectional study carried out in 2017 in Kailali district, Far West Province of Nepal involving 547 elderly. QOL was assessed by World Health Organization Quality of Life – BREF. **Results:** The mean score of overall QOL index for all respondents was 12.93. On disaggregation of data by selected background variables showed that the mean score of overall QOL index was observed to be highest for the respondents (14.13) who were frequently involved in social activities with low variability [Coefficient of variance (CV) ± 0.12]; and the lowest (9.93) for those respondents who were living with other family members (i.e., nephew/niece in law) with the highest variability (CV ± 0.18). Variables such as sex, marital status, involvement in social activities, involvement of decision making in the family, living arrangement, caste/ethnicity, educational status, medical care and land property ownership were positively correlated with QOL. On the other hand age, household size, elderly abuse, stress in life and old age security allowance was negatively correlated with QOL. **Conclusions:** Policy makers and programme managers need to prioritize investments in healthcare and dealing with the stress of elderly people to improve their QOL.

Key words

Aged, Elder abuse, Living arrangement, Psychological Stress, Quality of life

Introduction

Population ageing is a global issue. It is not only a social issue in developed countries where it is most prevalent, but also recognized as a challenge in developing countries.¹ The cut-off age for the elderly population varies across the countries and over time. According to the World Assembly on Ageing held at Vienna (Austria)

in 1982 and the United Nations International Conferences on Ageing and Urbanization in 1991, age is 60 years and above has been defined as the old age.² In the context of Nepal, Senior Citizen Act, 2006 also uses the age 60 years and above as elderly.³ Based on above, in this study, people whose age is 60 years and above were included as the elderly.

There is no commonly accepted definition of quality of life (QOL). It is a multi-dimensional concept, which cannot be explained in medical terms alone. The World Health Organization's Quality of Life Group has defined QOL as: 'an individual's perception of their position in life, in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns.' It is a broad concept affected in a complex way by the person's physical health, psychological state, personal beliefs, social relationships and their relationship to the salient features of their environment.⁴

Current interest in QOL of elderly research can be attributed to a number of factors. Firstly, there are increasing proportions of elderly people, presenting challenges in terms of meeting health and social care needs in a time of fiscal constraints. Secondly, medical technological advances have added years to life but not necessarily QOL. Thirdly, there has been a decisive shift in medical ethos away from a focus on secondary and tertiary implementation to primary intervention and prevention. Lastly, globalization has created more international competitiveness, and thus, a need for nations to improve the QOL of their citizens in the hope of improving their country's social, economic and political profile

In Nepal, issues related to aged people who are largely marginal, have not obtained proper attention. There are very few studies carried out concerning the QOL in Nepal. In the past, the studies has mainly focused on self-reported health,¹ functional disability,¹ loneliness,^{1,5} depression,⁶ sleep quality,⁷ elderly abuse,⁸ perceived QOL,⁹ living arrangement and QOL,¹⁰ physical and mental health status,¹¹ socio-economic status of elderly people,¹² factors determining QOL of elderly people,¹³ and health and social care need assessment.¹⁴

The main objective of this study was to examine the different levels of QOL of elderly population residing in community level in the rural Nepal. Specifically, the relationship of demographic variables (such as: age, sex, marital status and household size) and socio-economic variables (such as: involvement in social activities, involvement in decision making in the family, physical health problem, caste/ethnic group, abuse, living arrangement, stress in life, educational status, medical healthcare, having old age security allowance and having land property ownership) with QOL of elderly population were examined.

Methods

This is a cross-sectional study carried out in November-December, 2017. Rural area of Kailali district of Far West Province of Nepal has been chosen purposively as a study area. Total sample size for this study was determined 396 households through Yamane formula.¹⁵ A Multi stage sampling design was adopted for this study.

At the first stage, conveniently two Village Development Committees (VDCs) named (Hasuliya and Basauti (now renamed as Kailari Rural municipality) of Kailali districts which represent the highest proportion of elderly population were selected as sampling area. VDCs are lower-level administrative areas; Nepal had over 3200 of them at the time of the survey. Each VDC has nine wards (the lowest-level political unit). At the next stage, all the 18 wards of selected VDCs were sampled. All the wards of selected VDCs were considered as cluster. So, there were 18 clusters in this study. All the sampled clusters were considered as primary sampling units (PSU) for this study. At the last stage, 22 households with at least one elderly 60 years and above were selected from each sampled cluster. Systematic random sampling method was used for the selection of 22 households from each cluster. However, in the survey a total of 396 households were visited and 547 elderly people aged 60+ were successfully interviewed. All the elderly people in the sampled households were recruited.

World Health Organization Quality of Life – BREF (WHOQOL-BREF) was used to elicit elderly people's QOL.⁴ The WHOQOL-BREF consists of 26 items with the response options ranging from 1 (very dissatisfied/very poor) to 5 (very satisfied/very good). The first two items general QOL and general satisfaction with health are not included in the overall QOL index. The remaining 24 items assesses four domains: physical, psychological, social, and environmental. The physical domain (7 items) assesses activities of daily life including dependence on medicine, energy and fatigue, mobility, and work capacity. The psychological domain (6 items) assesses positive and negative feelings, including self-esteem, bodily image and appearance. The social domain (3 items) assesses personal relationship, social support and sexual activity. The environmental domain (8 items) includes questions related to financial resources, freedom, safety and security, health and social care, physical and home, and transport.

Finally, an overall QOL Index was designed exclusively for this study by taking the means of all four domains of QOL i.e. physical health, psychological state, social relations, and environment. The potential score of the index ranges between 4-20. It is interpreted that 4 indicates the 'worst' and 20 indicates the 'best' level of quality of life of elderly people. The WHOQOL-BREF has been validated for assessing QOL in a range of settings and used to assess QOL of older adults by a number of studies. The WHOQOL-BREF has been used among older adults in Nepal¹⁶ with past application of the Nepalese version demonstrating high reliability.¹⁷ The WHOQOL-BREF scale in this study demonstrated high internal consistency with a Cronbach's alpha coefficient of 0.79.

The study protocol was approved by the research ethics committee of the Central Department of Population Studies, Tribhuvan University (Ref. no. 03/2017). Respondent's right to refuse and withdraw from the interview at any time was respected. Respondents were assured of the confidentiality. Informed verbal consent of respondents was sought prior to the interview.

The data was statistically analyzed by using SPSS version 20.0. A t-test was performed to compare the means of two groups. Statistical significance was set at standard $p < 0.05$ in the two tailed test. For comparing the variability among elderly population within specific independent variable with respect to different aspect of QOL, a descriptive statistics measure was used and the results were expressed in coefficient of variation (CV), and CV values mean the extent of variability of data in a sample in relation to the mean of the population. The higher the coefficient of variation indicates the greater the level of dispersion among the mean. In addition, to examine the basic relationship between the dependent and independent variables, Karl Pearson's zero-order correlation coefficients (r) have been computed.

Results

Sample characteristics

There were 547 older adults aged 60 years and above, who were successfully interviewed for the study. The mean age of the participants was 71.43 ± 8.01 (SD) years. Majority of the participants were female (58.9%). Over three fifth (63.1%) participants were married. Average household size was reported to be 6.87 ± 3.29 persons. About one quarter (24.1%) of participants were literate. The literacy status of female respondents was lower (15.7%) compared with that of male respondents (39.1%).

Overall QOL index and selected background variables

The overall QOL was calculated 12.93 in this study (ranging from 4-20 score) which indicates moderate level of QOL of elderly people in the study area. It varies according to demographic and socio-economic variables. The overall QOL index was observed the highest (15.55) for those elderly people who have obtained secondary level of education followed by those elderly people who

frequently involved in social activities (14.13) and having no physical health problem (14.12) in the study area. The overall QOL index of elderly people was found the lowest (9.93) for those elderly people who lived with other

family members (i.e., nephew/niece in law) in the study area. The distribution of overall QOL index of the elderly people according to different demographic, social, and economic variables is shown in the Table 1.

Table 1. Differentials in quality of life of elderly people by background variables					
Factors		Mean	SD	CV	p-value
<i>Demographic Factors</i>					
Age (Years)	60-74	13.24	1.57	0.12	<0.001
	75+	11.94	1.62	0.14	
Sex	Male	13.13	1.74	0.13	<0.01
	Female	12.64	1.63	0.13	
Marital Status	Married	13.19	1.62	0.12	<0.001
	Other marital status*	12.25	1.64	0.13	
Household size	1-2 persons	12.28	2.06	0.17	<0.05
	3-4 persons	13.05	1.63	0.12	
	5-6 persons	12.72	1.72	0.14	
	7 or more persons	12.02	1.57	0.13	
<i>Social Factors</i>					
Involvement in social activities	Never	12.14	1.64	0.14	<0.001
	Rarely	13.45	1.47	0.11	
	Occasionally	13.95	1.02	0.07	
	Frequently	14.13	1.63	0.12	
Involvement in decision making in the family	No role	12.44	1.63	0.13	<0.001
	Play role	13.37	1.57	0.12	
	Don't know	10.67	1.86	0.17	
Physical health problem	Yes	12.27	1.64	0.13	<0.001
	No	14.12	0.96	0.07	
Elderly abuse	Yes	12.33	1.72	0.14	<0.01
	No	12.93	1.67	0.13	
Living arrangement	Living with spouse	12.81	1.98	0.15	<0.001
	Living with son/daughter in law	12.96	1.59	0.12	
	Living with daughter/son in law	12.75	1.92	0.15	
	Grand children	10.85	1.75	0.16	
	Other family members*	9.93	2.27	0.23	
Stress in life	Alone	11.64	2.05	0.18	<0.001
	Very severe	11.14	1.99	0.18	
	Severe	11.98	2.11	0.18	
	Moderate	12.83	1.46	0.11	
Caste/ethnic group	Hardly ever/ never	13.19	1.48	0.11	>0.05
	Tharu	12.89	1.78	0.14	
	Non-Tharu**	13.04	1.66	0.13	
<i>Socioeconomic Factors</i>					
Level of education	Illiterate	12.58	1.63	0.13	<0.001
	Literate but no formal education	13.56	1.58	0.12	
	Basic education (1- 8)	13.59	1.83	0.13	
	Secondary education (9-12)	15.55	1.01	0.06	
	Higher education (bachelor +)	12.83	0.11	0.01	
Routine Health check	Yes	12.28	1.58	0.13	<0.001
	No	13.61	1.53	0.11	
Having old age security allowance	Yes	12.53	1.56	0.12	<0.001
	No	13.48	1.76	0.13	
Land /property ownership	Yes	13.07	1.71	0.13	<0.001
	No	12.63	1.65	0.13	
*Other marital status includes unmarried and widow/widower. *Other family members includes niece, nephew/niece in law. **Non-Tharu includes: Hill Bhraman, Chhetri, Thakuri, Magar, Gurung, Kami, Damai/Dholi, Sarki, Sonar, Lohar, Tamata and Badi caste group.					

Demographical variables and quality of life

The mean score of overall QOL index was observed the highest for the respondents (14.13) who were frequently involved in social activities. This indicates that involvement in social activities of elderly people play the most important role in determining the QOL of elderly people. The mean value of overall QOL index of all selected background variables was observed statistically significant except caste/ethnicity.

The mean score of overall QOL index was found slightly higher for male respondents compared to female respondents ($M=13.15$ for male; $M=12.76$ for female), suggesting that male elderly people may have a better overall QOL compared to female elderly people. Currently married elderly people ($M=13.19$) exhibited significantly higher overall QOL index as compared to elderly people with 'Others' marital status ($M=12.25$). The means of overall QOL of elderly people was found the highest for household size with three to four members ($M=13.05$) followed by households with five or six members ($M=12.72$). This was statistically significant. This indicates that household size has a significant effect on determining overall QOL of elderly people.

Social variables and quality of life

Elderly people who participated in social events at community level frequently had the highest overall QOL index ($M=14.13$) than those who never participated had the lowest overall QOL index (12.14). Elderly people who play decision making role in the family as they grew elderly had a higher overall QOL ($M=13.37$) as compared to those elderly people who had no role in decision making in the household ($M=12.44$). The finding suggests that the community participation and role of decision making in the family has a positive impact on overall QOL index of elderly people. Elderly people who suffered from at least one physical health problem had lower overall QOL index and maximum variation ($M=12.27$) as compared to those who did not suffer from at least one physical health problem ($M=14.12$).

Elderly people reporting to have faced any form of abuse (or violence) since they turned 60 years have a significantly low overall QOL index ($M=12.33$) as compared to those who have never faced any types of abuse ($M=12.93$). Elderly people living with their son/daughter-in-law only had the highest overall QOL index and minimum variation ($M=12.96$) compared to those who reside alone ($M=11.64$). This reflects that living arrangements has a strong impact in affecting overall QOL of elderly.

Elderly people who had very severe stress had the lowest overall QOL index ($M=11.14$) while those who hardly have any stress had the highest overall QOL index ($M=13.19$) (Table 1). The data reflects that as the level of stress increases in intensity i.e. becomes severe, their overall QOL index decreases and vice versa. This suggests that stress in life has a strong impact in affecting overall QOL of elderly people. Elderly people who belong to Non-Tharu ethnic group have higher overall QOL index (13.04) and lower variation ($CV\pm 0.13$)

compared to elderly people of Tharu ethnic group (12.89) with greater variation ($CV\pm 0.14$) (Table 1), suggesting that Non-Tharu elderly people have better QOL compared to Tharu elderly people.

Economic variables and quality of life

The mean score of overall QOL index increased with the level of education. This indicates that there is positive relationship between the level of education and QOL of elderly people. Elderly people who went for routine health check-up had higher overall QOL mean scores and less variation ($M=13.35$; $CV\pm 0.11$) compared to those who did not have routine health check-up ($M=12.22$; $CV\pm 0.13$), suggesting that elderly people who frequently practiced in routine health check-up have better overall QOL compared to those who did not have routine health check-up. The main effect of routine health check-up was observed to be significant. It was observed that elderly people who had land/ property ownership had higher overall QOL index ($M=13.07$) than those who did not have land/ property ($M=12.63$). This result was found statistically significant. This indicates that land/property ownership has a significant impact in affecting overall QOL of elderly people.

Table 2 describes the relationship between dependent and independent variables. The overall QOL index is considered as dependent variable and other demographic and socio-economic variables are considered as independent variables. The overall QOL index was observed positively correlated with all the selected demographic variables except household size of elderly people. The correlation coefficient was found positively correlated for selected demographic variables such as: sex (0.107) and marital status (0.225), but negatively correlated with other selected demographic variables such as: household size (-0.079) and age group (-0.326) with overall QOL index. Further, there was significant relationship between overall QOL index and selected demographic variables (age, sex and marital status) except household size. This reveals that these selected demographic variables (age, sex and marital status) have significant relationship with QOL of elderly people.

Social variables have mixed result with overall QOL index. It was observed that variables (such as: elderly abuse, physical health problem and stress in life) had negative relationship (-0.153, -0.505 and -0.256 respectively) with overall QOL index; while other variables (such as: involvement in social/community activities, involvement in decision making in the family and living arrangements, caste/ethnic group had positive correlation (0.197, 0.218, 0.127 and 0.038 respectively) with overall QOL index (Table 2). Further, the correlation of all selected social variables except caste/ethnic group was found significant with overall QOL index.

The socioeconomic variables also had mixed result with overall QOL index. Some of the variables such as: education, medical care and land/property ownership were positively correlated (0.230, 0.049 and 0.101 respectively) with overall QOL index; while variables such as: old age security allowance was observed negatively correlated (-0.224) with overall QOL index.

Table 2. Zero order correlation matrix: Comparing quality of life with demographic and socio-economic variables

Variables	Demographic Variables					Social Variables					Socioeconomic Variables					
	OQOLI	AG	SD	MS	HHS	PHP	ISA	DMIF	AB	LA	SIL	CEG	EDS	MC	OASA	LO
OQOLI	1.000															
AG	-0.326**	1.000														
SD	0.107*	-0.050	1.000													
MS	0.225**	0.223**	0.339**	1.000												
HHS	-0.079	0.043	0.047	-0.033	1.000											
PHP	-0.505**	-0.355**	-0.057	-0.129**	0.003	1.000										
ISA	0.197**	0.047	0.159**	0.178**	-0.014	0.031	1.000									
DMIF	0.218**	0.226**	0.119**	0.186**	0.273**	-0.122**	0.196**	1.000								
AB	-0.153**	0.027	0.018	0.020	0.041	0.046	0.018	0.088*	1.000							
LA	0.127**	-0.013	0.027	0.196**	-0.341**	0.057	-0.006	-0.159**	-0.056	1.000						
SIL	-0.256**	0.102*	-0.121**	-0.244**	0.156**	0.055	-0.035	0.093*	0.086*	-0.167**	1.000					
CEG	0.038	0.015	0.011	-0.044	0.212**	0.190**	0.290**	0.491**	-0.005	-0.109*	0.180**	1.000				
EDS	0.230**	0.184**	0.293**	0.237**	0.023	-0.184**	0.223**	0.299**	-0.031	0.069	-0.040	0.204**	1.000			
MC	0.049	-0.073	0.093*	-0.095*	0.052	0.125**	0.090*	0.159**	-0.039	0.036	0.044	0.225**	0.150**	1.000		
OASA	-0.224**	-0.428**	-0.170**	-0.450**	-0.016	0.359**	-0.036	-0.322**	-0.046	-0.023	0.061	0.167**	-0.293**	0.094*	1.000	
LO	0.101*	-0.056	0.766**	0.135**	0.084*	-0.037	0.134**	0.157**	0.018	-0.039	-0.035	0.077	0.240**	0.114**	-0.072	1.00

*Correlation coefficient is significant at the 0.05 level (two-tailed), ** Correlation coefficient is significant at the 0.01 level (two- tailed),

Note: Serially as presented in the table: OQOLI: Overall QOL index, ISA: Involvement in social activities; CEG: Caste/ethnic group, PHP: Physical Health Problem, AG: Age group, DMIF: Decision making in the family, EDS: Educational status, SD: Sex Difference, AB: Abuse, MC: Medical check-up, MS: Marital status, LA: Living arrangements, OASA: Old age security allowance, HHS: Household size, SIL: Stress in life, LO: Land/property ownership.

*Correlation coefficient is significant at the 0.05 level (two-tailed), ** Correlation coefficient is significant at the 0.01 level (two- tailed),

Note: Serially as presented in the table: OQOLI: Overall QOL index, ISA: Involvement in social activities; CEG: Caste/ethnic group, PHP: Physical Health Problem, AG: Age group, DMIF: Decision making in the family, EDS: Educational status, SD: Sex Difference, AB: Abuse, MC: Medical check-up, MS: Marital status, LA: Living arrangements, OASA: Old age security allowance, HHS: Household size, SIL: Stress in life, LO: Land/property ownership.

Discussions

This research examined the different levels of QOL of elderly people who were residing in rural areas of Kailali district Nepal. There are very few studies carried out on the influence of sociodemographic and economic factors on QOL of elderly people in Nepal. Past studies have only focused on some specific aspects of elderly population.^{1,5-14}

Overall QOL index

This study found average QOL score of Nepalese elderly in rural areas was 12.92 which indicated a moderate level of QOL. The result of the study observed close to with other similar types of studies conducted at different part of India at in the past. A study in Navi Mumbai (India) in urban areas on elderly women and found that the overall QOL index was 13.50;¹⁸ and another study in rural areas of India on elderly men and women reported overall QOL index at 12.92.¹⁹

Demographic variables and overall QOL index

This study found that selected demographic variables (like age, sex and marital status) had significant relationship with overall QOL index of elderly people; while household size was not observed statistically significant. Males had higher overall QOL index than the females. Overall QOL index was found higher for those elderly people whose marital status was 'currently married' compared to elderly people who were single or widowed. Earlier studies have also shown similar pattern in relation with demographic variables and QOL of elderly, indicating that elderly people who were currently married and were living with their spouse generally led a happier life and had an overall better QOL as compared to those who were widowed or lived alone.^{18,20} Central Department of Population Studies/Tribhuvan University (CDPS/TU)¹⁴ reported in a study that females were more vulnerable than that of males. In this study, age was inversely correlated with overall QOL index of elderly. In this context, Pinquart²¹ and Durgawal, Shinde, and Godwin²² argued that advanced age reduces the QOL of most elderly. Fernandez and Kulik,²³ suggested that being younger, married, and having higher level of education have been associated with greater reported of QOL. On the contrary, in an Italian study Netuveli and Blane²⁴ found that centenarians reported greater satisfaction with life than younger age groups. They argued that QOL was found to be significantly higher in the elderly people compared with younger people using individual QOL measures.

Social variables and overall QOL index

This study found that psychosocial variables like elderly abuse, physical health related problem and stress in life had significant negative relationship (-0.128, -0.495 and -0.256 respectively) with overall QOL index; while caste/ethnicity, involvement in social/community activities, involvement in decision making in the family and living arrangements have significant positive correlation (0.038, 0.197, 0.218 and 0.127 respectively).

Zan and Qin²⁵ had reported that physical and mental health status of elderly people was positively related to subjective QOL. Dongre and Deshmukh¹⁹ observed that physical health status, health insurance, involvement in social activities, current working status, relationship with family members, health care, spirituality, active life, involvement in decision making and welfare scheme by the government contributed to the better quality of elderly life. Avolio et al.²⁶ found that a social relationship which included interpersonal relations and the availability of support and advice had a significant correlation with QOL of elderly people; and suggested that social relation has positive relationship with QOL of elderly people.

Economic variables and overall QOL index

This study found that education, medical care and land/property ownership were positively correlated (0.230, 0.049 and 0.101 respectively) with overall QOL index while the variable like: old age security allowance was observed negatively correlated (-0.224). The negative correlation of old age social security allowance of elderly people with overall QOL index indicated that it did not contribute to the betterment of the elderly people in the study area. Elderly people who did not receive old age security allowance have better QOL than those who had received old age allowance. The reason might be that elderly people received old age allowance only after the age of 70 years and above. Quality of life of elderly people was found better in the earlier age compared to later ages due to physical health problem, mental health problem and lack of social relations. A study in rural Bangladesh reported that elderly people prioritized being healthy and having a secure financial situation as factors for having good QOL.²⁷ Many studies have reported that there was significant positive association between education and QOL of elderly people.^{28,29,19} Literate elderly people had better QOL as compared to illiterate elderly people.

Limitations of the Study

This study has few limitations. As it was done in rural areas of one district of Nepal, the findings might not be generalized to whole of Nepal. Future studies should include urban populations and larger and more representative population. The study has used the responses of elderly themselves regarding the demographic and socio-economic factors rather than any objective measures or collateral information. There may be many confounding variables influencing QOL, which were not studied.

Conclusions

It was observed that the QOL of rural elderly Nepalese were at the moderate level. It varied amongst demographic and socio-economic groups. Factors such as sex, marital status, involvement in social activities, decision making in the family, living arrangements, education, and land ownership had positive influence on QOL. Age, physical health problem, stress in life, abuse, and having old age security allowance correlated

negatively with QOL. Factors like; household size, caste/ethnic group, and medical check-up have no significant influence on QOL of elderly people. Hence, policy makers and programme managers need to prioritize investments in physical and mental health healthcare for elderly people in order to improve the overall QOL. Interventions programmes designed to deal with the stress and support the mental health are expected to improve the QOL of the elderly. Various interventions such as provision of accessible counseling services and health care may be beneficial. The findings of the study suggest the need for future research in the areas such as elder abuse and its identification and management, specifically the reasons for which these are not being reported or addressed; factors that may improve social involvement and community participation of elderly people in diverse socio-economic context.

Acknowledgement

The author wish to thank all the respondents for their cooperation during field study and the Kailali Multiple Campus staffs for their valuable support. The author is grateful to Dr Padma Prasad Khatriwada and Dr Hom Nath Chalise for providing important feedbacks to improve this research paper; and to Mr Tikendra Raj Joshi in editing language in the manuscript.

Author information Mahendra Raj Joshi, PhD, Associate Professor, Department of Population Studies, Kailali Multiple Campus, Tribhuvan University, Dhangadhi, Nepal; Email: kmc@gmail.com and Email: drmahendrarajjoshi@gmail.com

Correspondence: Mahendra Raj Joshi, PhD, Associate Professor, Department of Population Studies, Kailali Multiple Campus, Tribhuvan University, Dhangadhi, Nepal; Email: drmahendrarajjoshi@gmail.com

Competing interests: None.

Received: 15 August 2020; **Revised:** 3 October 2020; **Accepted:** 4 October 2020

Copyright © 2020 The Author(s). This is an open-access article distributed under the terms [CC BY-NC] which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Citation: Joshi MR. Demographic and socio-economic differentials of quality of life of elderly people in rural Nepal. *Journal of Geriatric Care and Research* 2020, 7(3): 120-127.

References

- Chalise HN, Kai I, & Saito T. Significant variables of self-reported health: A study of older adults from a developing country like Nepal. *Bio Science Trends*, 2007; 1: 102-107.
- United Nations. Ageing and urbanization. New York: Department of Economic and Social Affairs, Population division, United Nations Secretariat; 1991.
- Ministry of Women, Children and Social Welfare (MoWCSW). Senior citizen act 2006. Kathmandu: Author; 2006.
- World Health Organization Quality of Life Group (WHOQOL-Group). WHOQOL User manual. Geneva: Author; 1998. Available from <http://www.who.int/msa/mnh/mhp/ql1.htm>.
- Chalise HN. Social support and subjective well-being of Nepalese older adults. *Asian Social Work and Policy Review*, 2010; 4: 1-25.
- Chalise HN. & Rai SL. Prevalence and correlates of depression among Nepalese Rai older adults. *Journal of Gerontology and Geriatric Research*, 2013; 2: 130-135. DOI:10.4172/2167-7182.1000130.
- Chalise HN, & Lamsal U. Walking and sleep quality of Nepalese older adults living in briddashram. *Journal of Gerontology and Geriatric Med*, 2017; 3: 1-5.
- Chalise HN, & Basnet M. Abuse of older adults residing in the community of Nepal. *International Journal of Gerontology and Geriatric Research*, 2017; 6: 415-424. DOI: 10.4172/216 7-7182.1000415.
- Joshi MR, Chalise HN, Khatriwada PP. Quality of Life of Nepalese Elderly Living in Rural Nepal. *J Gerontol Geriatr Res*, 2018; 7: 484. doi:10.4172/2167-7182.1000484
- Joshi MR. Living arrangements and quality of life of Nepalese elderly in rural Nepal. *Indian Journal of Gerontology*, 2019; 32 (2): 178-197.
- Joshi MR. Physical and mental health status of of elderly people in urban setting in Nepal. *Indian Journal of Gerontology*, 2018; 32 (4): 382-393.
- Joshi MR. Socio-economic status of elderly people in rural setting of Nepal. *Journal of Geriatric Care and Research*, 2020; 7(1): 36-42.
- Joshi MR. Factors determining quality of life of elderly people in rural Nepal. *J Gerontol Geriatr Res*, 2020; 9: 510. doi: 10.35248/2167- 0374.20.9.510
- Central Department of Population Studies/Tribhuvan University (CDPS/TU). Health and social care need assessment of elderly. Kathmandu: Central Department of Population Studies, Ageing Nepal, United Nations Population Fund; 2012.
- Yamane T. Statistics: An introductory analysis. New York: Harper and Row; 1967.
- Sapkota A, Sedhain A, Rai MK. Quality of life of adult clients on renal replacement therapies in Nepal. *J Ren Care*, 2013; 39(4): 228-235. doi: <https://doi.org/10.1111/j.1755-6686.2013.12021.x>
- Mishra SR, Sharma A, Bhandari PM, Bhochhibhoya S, Thapa K. Depression and Health-Related Quality of Life among Patients with Type 2 Diabetes Mellitus: A Cross-Sectional Study in Nepal. *PLOS ONE*, 2015; 10(11): e0141385. doi: <https://doi.org/10.1371/journal.pone.0141385>
- Gupta N. Quality of life of older women in urban India: Differential and determinants across class group in Navi Mumbai (Unpublished doctoral dissertation). School of Social Sciences, Tata Institute of Social Sciences, Mumbai; 2014.
- Dongre AR, & Deshmukh PR. Social determinants of quality of elderly life in rural setting of India. *Indian Journal of Palliative Care*, 2012; 18 (3): 181-189.

20. Hameed S, Brahmabhatt K, Patip DC, Prasanna KS, & Jayara S. Quality of life among the geriatric population in a rural area. *Global Journal of Medicine and Public Health*, 2014; 3 (3): 1-5.
21. Pinquart, M. Age differences in perceived positive effect, negative effect and affect balance in middle and old age. *Journal of Happiness Studies*, 2001; 2 (4): 375–405.
22. Durgawala PM, Shinde M, & Godwin VM. Study of assessment of quality of life in elderly residing in rural area. *International Journal of Science and Research (IJSR)*, 2014; 3 (10): 1291-1294.
23. Fernandez RM, & Kulik JC. A multilevel model of life satisfaction: effects of individual characteristics and neighborhood composition. *American Sociological Review*, 1981; 46 (6): 840–850.
24. Netuveli G, & Blane D. Quality of life in older ages. *British Medical Bulletin*, 2008; 85 (1): 113-126.
25. Zhan HJ, & Qin H. Adding life to years: Predicting subjective quality of life among oldest old. *The Journal of Ageing in Emerging Economic*, 2008; 43: 151-171.
26. Avolio M, Montagnoli S, Marino M, Basso D, Fluria G, Ricciardi W, & Belvist AG. Factors influencing quality of life for disabled and nondisabled elderly population. *International Journal of Gerontology and Geriatrics Research*, 2013; 13: 1-6.
27. Nilsson I. Occupational engagement among older people: evaluation, repertoire and relation to life satisfaction. Sweden: Umea University; 2006.
28. Kumar SG, & Majumdar A. Quality of life (QOL) and its associated factors using WHOQOL-BREF among elderly in urban Puducherry, India. *Journal of Clin Diagn Research*, 2014; 8 (1): 54–71.
29. Mudey A, Ambekar S, Goyal RC, Agareka S, & Wagh VV. Assessment of quality of life among rural and urban elderly population of Wardha district, Maharashtra, India. *Ethno Medicine*, 2011; 5 (2): 89-93.

Case Report

Posterior cortical atrophy: a case report on a rare form of dementia

Prince Nwaubani, Sophie Young, Ejaz Nazir

Abstract

First described about three decades ago by D. Frank Benson and occasionally referred to as Benson's disease, posterior cortical atrophy (PCA) is a rare, debilitating, progressive neurodegenerative condition characterized mainly by declining visuo-perceptual/spatial capabilities, and structurally by occipito-temporal/parietal lobe atrophy. Although research evidence suggests a 5% incidence of PCA amongst people diagnosed with Alzheimer's disease, standard epidemiological data for PCA remains relatively scarce, possibly due to a lack of clinical awareness of the condition and an under-recognition plus under-reporting of its variable phenotypic presentation. There also appears to be difficulties in consistency with the classification, as well as a lack of proper validation of congruous diagnostic criteria with regards to PCA. This case report describes the clinical presentation of a 55-year-old Caucasian female diagnosed with PCA and the management strategy. The report also highlights the role of multimodal imaging and neuropsychology in arriving at a potential diagnosis.

Key words

Multimodal Imaging, Neurodegenerative Disorder, Neuropsychological Testing, Posterior Cortical Atrophy

Introduction

With the increasing trend in life expectancy, it is no longer uncommon knowledge that neurodegenerative conditions are on the increase. The rarer sub-classes of dementias are now being seen more often in clinical practice, more disturbingly, in the younger age groups.¹ With this trend, traditional and conventional methods of investigating and detecting such conditions appear to be waning, as clinical specialists look to more sensitive tools for detection and differentiation of pathology, especially in its early phases. In vivo neuro-imaging, particularly of multimodal (structural and functional) capacity has become especially important to pinpoint regional vulnerability in the early stages of neurodegenerative disorders and for monitoring future therapeutic strategies.² Neuropsychological testing also appears to be

key in establishing a formal diagnosis, and in distinguishing early aetio-pathological variations pertaining to rarer forms of dementias.³

Posterior cortical atrophy (PCA) can be described as a neurodegenerative condition characterised by substantial, progressive, and a relatively particular reduction in visual processing skills and other functions subserved by parietal, occipital and occipito-temporal regions⁴. The phenotypic variability in presentation, relative rarity of PCA, and the relatively young age at onset does bring about a misdiagnosis in several patients.⁴ Though in most part, the underlying aetiopathology of PCA are attributable to Alzheimer's disease, diagnostic inconsistencies do exist due to aetiological heterogeneity (Lewy body dementia, cortico-basal degeneration, prion disease). Even where recognised as a clinico-radiological syndrome⁵, not all sufferers present with volume loss or atrophy on imaging. Furthermore, when radiologically compared to typical Alzheimer's disease presentations, biological mechanisms responsible for regional or differential vulnerability in brain images are currently unknown. Notably, longitudinal studies have shown sparing of hippocampal, frontal and entorhinal regions in PCA.⁵

The use of multimodal imaging techniques, applied in clinical settings, could play a major role in accurately identifying and differentiating atypical forms of Alzheimer's (i.e. PCA) most importantly, in the early phases, as seen in this case report of diagnosed PCA in a 55 year old Caucasian female.

Case history

A 55-year-old Caucasian female presented with an 18-month history of cognitive impairment and worsening vision. She complained of short-term memory deficits, reduced coordination and poor visuospatial awareness. She was also experiencing myoclonic jerks daily.

There were also associated functional impairments. She was requiring increasing input from her husband for activities such as cooking, managing finances and use of electronic devices within the home. Her driving was also affected. In one instance, she hit a pillar after drifting close to the curb. There was no evidence of affective or psychotic symptoms.

Assessments

Clinical assessment and investigations

Her past medical history included fibromyalgia and Sjogren's syndrome. There was no prior history of psychiatric illness, vascular risk factors or traumatic brain injury. Routine blood tests were unremarkable. There was no evidence of visual field defects or retinal pathology on examination.

Neuroimaging

Following worsening vision, an MRI scan of the head was requested. The scan showed normal sized ventricles and no evidence of lesions. There were also no abnormalities of the optic nerve identified.

She was then subsequently reviewed by neurology a couple of months later and a fluorodeoxyglucose positron emission tomography (FDG PET)/CT scan of her brain was requested. The scan showed moderate reduced grey matter differentiation in the parietal lobes bilaterally, more prominent on the right and mildly reduced activity in the right and left lateral temporal lobes, again more prominent on the right. There was mildly reduced activity within the left and right lateral occipital lobes. There was also reduced activity within the left and right precuneus region which was more severe on the right. There was maintenance of activity in the frontal and medial occipital lobes.

Addenbrooke's Cognitive Examination III score was completed and she scored 69/100, which was below the cut off score of 82. There were deficits across all domains of memory, verbal fluency, language, attention and visuospatial abilities. Difficulties were particularly prominent in the visuospatial domain.

Neuropsychological assessment

Based on the patients educational and employment history, an estimate of her premorbid functioning placed her in the 'high average' range of ability on the Wechsler Adult Intelligence Scale.

On the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS), her performance in the visuospatial/constructional index was impaired, falling within the 'extremely low' range. Her performance in the immediate and delayed memory domain was also impaired, again falling within the 'extremely low' range. Her performance on the language domain of the RBANS was comparatively less impaired in the 'low average' range but still below her estimated level of pre-morbid functioning. The Sydney Language Battery (SYDBAT) was also administered. She was able to identify and name 27/30 items indicating relative sparing of language functioning on the tests administered. On the Visual Object and Space Perception Battery (VOSP), there was a deficit in performance on each of the space perception tests with scores falling below each test's respective cut-off score. Her reading was slow in speed and her writing was reported to be illegible.

Overall testing revealed a global deficit in cognitive functioning and deficits in visuospatial skills with a particular deficit in spatial perception. There were deficits in episodic memory and attention with relative sparing of language ability.

Given the findings she was referred to the cognitive disorder clinic at University College London Hospital where a diagnosis of Posterior Cortical Atrophy (PCA) was confirmed after a further evaluation of the patient's history, neurological examination, cognitive assessments and a repeat of some of the prior neuropsychometric testing. This revealed marked visual perceptual and spatial dysfunction, severe calculation difficulties, memory impairment and limb apraxia. A lumbar puncture was offered to investigate the underlying aetiology; however, the patient did not wish to have this.

Management

Research evidence suggests that some patients experience improvement in their symptoms and a slowing of progression with an acetylcholinesterase inhibitor, as the aetiology in the vast majority of PCA is Alzheimer's disease.⁴ Donepezil 5mg daily was commenced, increased to 10mg daily after a month. Patient did not experience any side effects and daily functioning improved slightly within this period. She also received an extensive information pack providing further information on the illness and symptoms. She was further referred to the Alzheimer's Society.

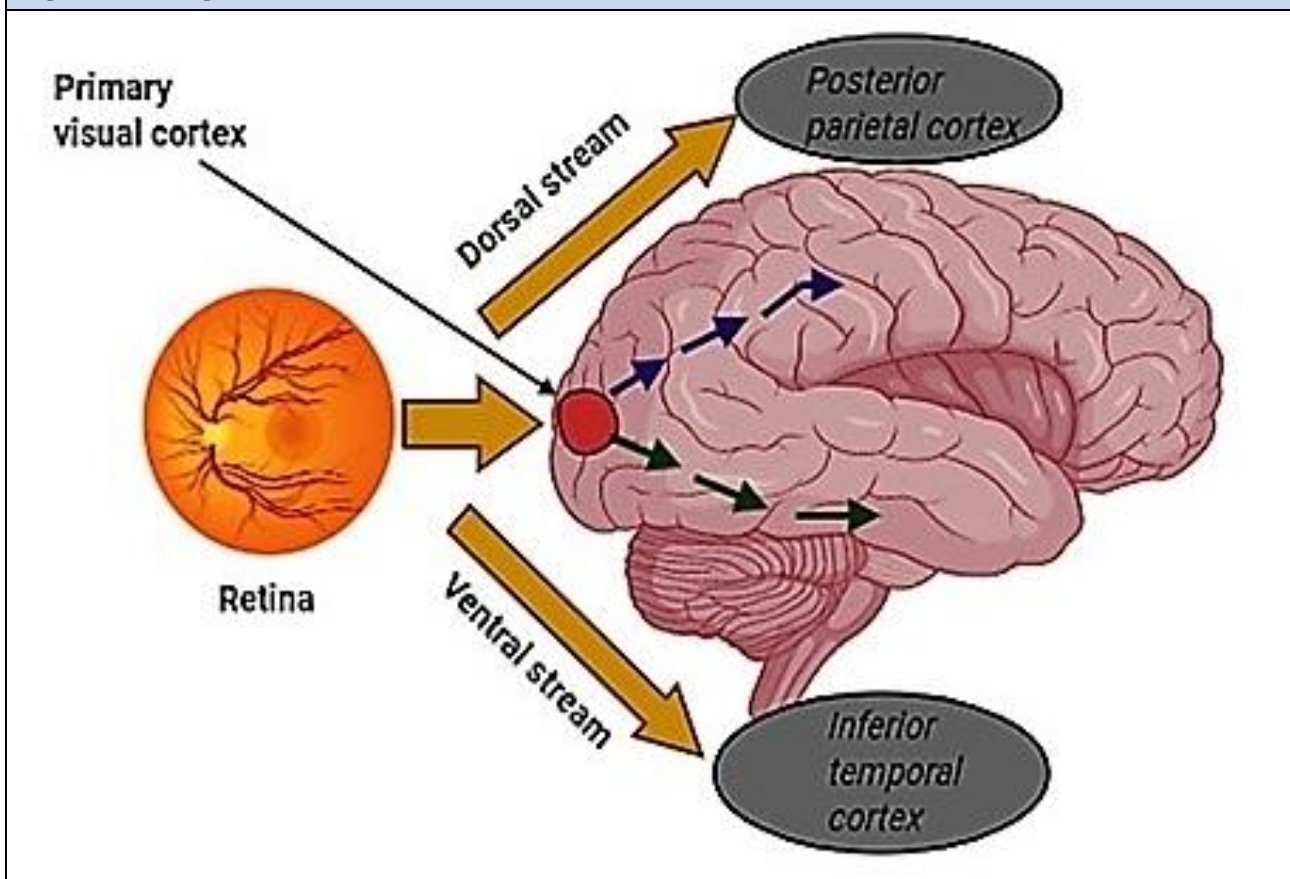
Patient was reviewed after 3 months. At the review she scored 20/30 on the Mini Addenbrooke's Cognitive Examination which showed an improvement of 5 points compared to when she was last reviewed. On the Bristol Activity of Daily Living Scale (BADLS), she scored 9/60, which indicated an improvement in functioning, though with prompts and also some support provided with activities of daily living. She was happy to continue taking donepezil. She continues to be socially active and has further reported improvement in mobility generally.

Discussion

Pathophysiology of PCA

In 1988, at the University of California, San Francisco (UCSF), American neurologist, Dr Frank Benson evaluated five patients, and described them as presenting with a progressive disorder of higher order visual function, while also noting that other cognitive abilities such as insight, judgement and memory had remained intact. Further imaging analysis depicted atrophy in the posterior aspect of the brain which were vital for visual processing. Speculating that the condition was an atypical form of Alzheimer's due to the manner of progression, Benson would name the condition, 'posterior cortical atrophy'.⁶

To fully appreciate the pathophysiology behind PCA, a relative understanding of the normal visual processing within the brain is required as illustrated in Fig 1 below.

Fig 1: Processing of visual stimulus in the brain

Visual stimulus, via a variety of networks is transmitted into the occipital cortex, to a specific area of the brain known as the primary visual cortex. This is the site where visual information is primarily processed. By a series of higher order visual processing and utilizing two main brain pathways or circuits as seen in Fig 1, the brain is able to interpret the stimulus from the retina. The dorsal visual stream relays visual information from the occipital cortex to the parietal cortex which mainly determines spatial relationships. The ventral visual stream relays information to the temporal cortex which helps to identify exactly what is being seen, objects or faces for instance.

In a diffusion tensor magnetic resonance imaging tractography study looking at the dorsal and ventral visual pathways of seven patients with a confirmed diagnosis of PCA, bilateral fasciculus abnormalities were detected and damages to pathways which mirrored clinical phenotypic presentations in the patients were also identified.⁷

Our patient presented mostly with dorsal cognitive deficits, possibly indicative of damage to the fronto-parietal superior longitudinal fasciculus.

Genetic risk factors for PCA

The direct aetiology of PCA, just like Alzheimer's disease is largely considered to be unknown and it is also not very well established as to whether the risk factors for both

Alzheimer's disease and PCA are identical. Links to specific genetic mutations are speculative and have also been broadly unknown.

Prior single laboratory studies contemplated the effect of APOE (common genetic risk factor for late onset Alzheimer's disease) as a potential genetic risk factor in PCA pathology and nominated CLU, BIN1 and ABCA7 as likely loci of risk in both PCA and Alzheimer's disease.⁸

More recently, in 2016, genome wide association studies involving a consortium of 11 centres, across Europe, the United states and Australia, involving 302 participants provided insight into 3 possible novel candidate loci implicated as strong risk factors for PCA: loci near CNTNAP5, FAM46A and SEMA3C.⁹ For PCA, the study also indicated a less strong or less likely association with the APOE4 allele.

Difference of PCA from early onset Alzheimer's disease (EOAD)

The pathological entities comprising Alzheimer's disease and PCA are closely and almost usually identical. However, key differences underlie their cognitive features. Differences in Neuropsychological features which distinguish PCA from EOAD include impairments in visuospatial, visuoperceptual, visuoconstructive and

handwriting functions which are usually more impacted upon, compared to EOAD.¹⁰ This was shown in part by the patient's neuropsychometric test results, which were notably within the 'extremely low range' in some of these functions. Memory is usually also well preserved in the initial phases of PCA when compared to EOAD.

Management of PCA

According to the Alzheimer's society, there are no specific medications for the treatment of PCA.¹¹ The acetylcholinesterase inhibitors utilized in mild to moderate Alzheimer's disease have been found to be helpful in some patients especially those with known Alzheimer's disease aetiology from the start.

Treatment with low dose methylphenidate specifically to improve motivation and engagement in activities of daily living have been found to be beneficial in a particular report.¹²

Single case reports have identified more complementary and alternative forms of medicine such as chiropractic spinal manipulation and dynamic neuromuscular stabilization in the improvement in patients' perception of health and the overall satisfactory progress in the quality of life. The report stressed the essentials of adjunctive rehabilitative treatment to more conservative pharmacological treatment especially in patients with additional motor disturbances.¹³

Support groups run by the rare dementia support UK organise national and regional support groups where individuals affected share experiences and hear the latest in research and information. They also encourage engagement in pleasurable activities for affected individuals as well as provide support with activities of daily living.¹⁴

Role of multimodal imaging and neuropsychology

In summary, with the increasing prevalence of the rarer forms of neurodegenerative conditions, traditional MRI sequences are usually not able to specifically identify and differentiate regional pathology and, when used in isolation, are not sufficiently sensitive to detect and quantitate neurodegenerative or neuroinflammatory processes. Multimodal imaging techniques, which combines imaging modalities, can identify these conditions by characterizing micro alterations and quantifying metabolic changes, quite relevantly, and at early stages, which may precede soft tissue pathology. In some aspects, such techniques can also define internal microanatomy, identify grey matter changes and could also be sensitive to microstructural alterations resulting from neuroinflammatory and neurodegenerative processes.^{2,15} This was seen in the case history which initially showed normal MRI features, but depicted neurodegenerative pathology on PET-CT. The importance of neuropsychological testing in reaching the relevant diagnosis is also worth mentioning. Testing has revealed deficits mostly attributable to deteriorating visuospatial skills, as well as impaired spatial perception and general sparing of language abilities. Neuropsychological tests

that evaluate the dorsal visual stream are particularly sensitive to PCA.¹⁶

Conclusion

This case report contributes to the literature base of one of the rare forms of dementia (PCA) and may improve further awareness of the condition. Application of multimodal imaging and neuropsychological assessments at the clinical level may prevent misdiagnosis and may assist the patient in receiving appropriate supportive measures early.

Author information: Prince Nwaubani, MD, Clinical Research Fellow (Imaging) and Doctoral Researcher (Neuropsychiatry). Specialist Registrar, Immunopsychiatry Research Clinic, Clinical Imaging Sciences Centre, Department of Clinical Neuroscience and Neuroimaging, Brighton and Sussex Medical School, University of Sussex, Kingsgate Road, Falmer campus, East Sussex, BN1 9RR, UK, Email: p.nwaubani@bsms.ac.uk; **Sophie Young**, MB ChB, Specialty Registrar, Midlands Partnership NHS Foundation Trust, Trust Headquarters, Corporation Street, Stafford, ST16, 3SR, UK, Email: sophie.young@mpft.nhs.uk; **Ejaz Nazir**, MBBS, MD, Consultant in Old Age Psychiatry and Honorary Senior Lecturer, University of Chester, Midlands Partnership NHS Foundation Trust, Trust Headquarters, Corporation Street, Stafford, ST16, 3SR, UK, Email: Ejaz.Nazir@mpft.nhs.uk

Correspondence: Prince Nwaubani, MD, Clinical Research Fellow (Imaging) and Doctoral Researcher (Neuropsychiatry). Specialist Registrar, Immunopsychiatry Research Clinic, Clinical Imaging Sciences Centre, Department of Clinical Neuroscience and Neuroimaging, Brighton and Sussex Medical School, University of Sussex, Kingsgate Road, Falmer campus, East Sussex, BN1 9RR, UK, Email: p.nwaubani@bsms.ac.uk

Competing interests: None.

Received: 23 December 2019; **Revised:** 12 November 2020; **Accepted:** 14 November 2020

Copyright © 2020 The Author(s). This is an open-access article distributed under the terms [CC BY-NC] which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Citation: Nwaubani P, Young S, Nazir E. Posterior cortical atrophy: a case report on a rare form of dementia. *Journal of Geriatric Care and Research* 2020, 7(3): 128-132.

References

1. Nwaubani P, Nazir E. Primary progressive aphasia: a case report on diagnostic issues: *J Geriatr Care Res* 2018; 5(1):6-8.
2. Crombe A, Planche V, Raffard G, Bourel J, Dubordieu N, Panatier A, Fukutomi H, Dousset V, Olié S, Hiba B, Tourdias T. Deciphering the microstructure of hippocampal subfields with in vivo DTI and NODDI: Applications to experimental multiple sclerosis. *Neuroimage* 2018; 172: 357-368.
3. Aresi A, Giovagnoli AR. The Role of Neuropsychology in Distinguishing the Posterior Cortical Atrophy Syndrome and Alzheimer's Disease. *J Alzheimer's Dis* 2009; 18(1):65-70.
4. Crutch SJ, Lehmann M, Schott JM, Rabinovici GD, Rossor MN, Fox NC. Posterior cortical atrophy. *Lancet Neurol* 2012; 11:170-8.
5. Firth NC, Primativo S, Marinescu RV, et al. Longitudinal neuroanatomical and cognitive progression of posterior cortical atrophy. *Brain* 2019; 142(7):2082-95.

6. Benson DF, Davis RJ, Snyder BD. Posterior cortical atrophy. *Arch Neurol.* 1988; 45(7):789-93. doi: 10.1001/archneur.1988.00520310107024.
7. Migliaccio R, Agosta F, Scola E, et al. Ventral and dorsal visual streams in posterior cortical atrophy: a DT MRI study. *Neurobiol Aging.* 2012;33(11):2572-84. doi: 10.1016/j.neurobiolaging.2011.12.025.
8. Carrasquillo MM, Khan Qu, Murray ME, et al. Late-onset Alzheimer disease genetic variants in posterior cortical atrophy and posterior AD. *Neurology.* 2014;82(16):1455-62. doi: 10.1212/WNL.0000000000000335.
9. Schott JM, Crutch SJ, Carrasquillo MM, et al. Genetic risk factors for the posterior cortical atrophy variant of Alzheimer's disease. *Alzheimers Dement.* 2016 Aug;12(8):862-71. doi: 10.1016/j.jalz.2016.01.010.
10. Li J, Wu L, Tang Y. et al. Differentiation of neuropsychological features between posterior cortical atrophy and early onset Alzheimer's disease. *BMC Neurol.* 2018;18, 65. <https://doi.org/10.1186/s12883-018-1068-6>
11. Alzheimer's Society UK. [Internet] Posterior Cortical Atrophy. United Kingdom, 2020. [Cited 2020 November 12] Available at <https://www.alzheimers.org.uk/about-dementia/types-dementia/Posterior-cortical-atrophy>
12. Mendez MF. Methylphenidate Treatment for Patients With Posterior Cortical Atrophy. *J Neuropsychiatry Clin Neurosci.* 2018 Fall;30(4):334-336. doi: 10.1176/appi.neuropsych.17120356.
13. Francio VT, Boesch R, Tunning M. Treatment of a patient with posterior cortical atrophy (PCA) with chiropractic manipulation and Dynamic Neuromuscular Stabilization (DNS): A case report. *J Can Chiropr Assoc.* 2015;59(1):37-45.
14. Rare Dementia Support. [Internet] Posterior Cortical Atrophy. United Kingdom, 2020. [Cited 2020 November 12] Available at <https://www.raredementiasupport.org/posterior-cortical-atrophy/>
15. Treit S, Steve T, Gross DW, Beaulieu C. High resolution in-vivo diffusion imaging of the human hippocampus. *Neuroimage.* 2018; 182:479-487. doi: 10.1016/j.neuroimage.2018.01.034.
16. Crutch SJ, Schott JM, Rabinovici GD, Boeve BF, Cappa SF, Dickerson BC, Dubois B, Graff-Radford NR, Krolak-Salmon P, Lehmann M, Mendez MF, Pijnenburg Y, Ryan NS, Scheltens P, Shakespeare T, Tang-Wai DF, van der Flier WM, Bain L, Carrillo MC, Fox NC. Shining a light on posterior cortical atrophy. *Alzheimers Dement.* 2013 Jul;9(4):463-5. doi: 10.1016/j.jalz.2012.11.004.

Research article

Perceived social support among hospitalized elderly patients in Indian settings

Ruchi Saini, Amulya Sharma, Gurleen Kaur, Jasman Brar, Neerja Hans, Rippandeep Kaur, Sukhpreet Kaur, Sukhpal Kaur

Abstract

Introduction: Support systems act as a crucial element in everyone's life especially as one ages. The elderly support system includes family, community and government, who are involved in providing comprehensive care to the elderly and thus improve their quality of life. Its importance is much more evident in the hospitalized elderly. **Objective:** To explore support system of the hospitalized elderly patients and its relationship with their dependency level. **Methods:** A descriptive-exploratory design was employed to collect data from 201 elderly patients admitted in a tertiary care institution. The data was collected using Katz Index of Activities of Daily Living (ADL) and Multi-dimensional Scale of Perceived Social Support (MSPSS). **Results:** Katz Index of ADL showed that about 86.6% participants were fully functionally independent; whereas 2.5% and 10.9% participants were moderately and severely functionally impaired respectively. Overall, 20.4% participants had medium perceived social support (PSS) whereas 79.6% participants had high PSS. Personal profile characteristics such as gender, occupation, total monthly income were significantly associated with 'overall' PSS and PSS from 'friends'. Characteristics such as living status and housing were significantly associated with the PSS from 'significant others'; whereas educational status of participants was associated with the PSS from 'family' as per MSPSS. The 'overall' PSS was slightly positively correlated with 'functional dependence' of the study participants. **Conclusion:** Hospitalized elderly patients with severe medical-surgical conditions perceived more social support from significant others (relatives, care takers and domestic help) than from family and friends. With the increase in their dependency level for ADL, the PSS decreased.

Key words

Activities of Daily Living, Elderly, Perceived Social Support, Functional Dependence

Introduction

Ageing is a gradual process of becoming older. With advancing age, elderly people face several bio-psycho-sociological challenges due to physical and cognitive changes; many of them experience inability to afford high quality health and medical care, proper housing and even basic elements of daily life due to financial dependence, social isolation and other issues like abuse etc. They often suffer from one or more chronic illnesses. Sharma et al reported that the elderly patients admitted in emergency units were commonly suffering from cardiovascular problems such as hypertension, coronary artery disease, gastrointestinal problems such as cholelithiasis, intestinal obstruction, cancer of stomach, and musculoskeletal problems such as fracture of hip. It was observed that 53% of them were not able to maintain their hygiene and 63% were not able to bear the medical expenses.¹

The family of the elderly plays the major role as primary caregivers, meeting most of their physical demands such as preparing special meals, assistance in bathing, toileting, dressing, administering drugs etc. Kaur et al in a study on the assessment of functional status and independence in daily living activities reported that about one-third of the elderly above 60 years of age were partially dependent on the caregivers for certain activities such as food preparation, housekeeping and laundry.²

Support system acts as a crucial element in one's life especially when they age. Various positive support systems can lead to mental and physical wholesomeness of elderly people. These are important in alleviating stress, improving physical health and beating psychological problems like depression and anxiety. Earlier in India, the joint family system was the major support for the elders in providing the physical, social and economic security in addition to emotional and psychological support. But with changing family trends from joint to nuclear family, the support the elderly received from the family tends to decrease. Many elderly are left alone in old age homes where the care provided is often questionable.³ Being separated or distanced from their own children, they feel lonely and worthless. It affects them emotionally which may lead to physical and mental health problems, making their life difficult.

Lack of support systems affects the wellbeing, process of recovery and standard of living of the elderly individuals. It increases the risk of depression through the associated stress, social isolation and loneliness.⁴ Further, lower social support affects the quality of life,⁵ leads to sleep disturbances, cognitive decline and an increase in morbidity and mortality rates.⁶

The present study is an attempt to assess the support systems of elderly patients who are admitted to a tertiary level hospital, suffering from certain disease conditions.

Methods

Design

A descriptive-exploratory research design was adopted to assess the dependency level and social support of the elderly patients admitted in Post-graduate Institute of Medical Education and Research (PGIMER), Chandigarh, one of the premier tertiary level hospitals of North India. The institution has about 2500 beds which cater to patients from all over the states of Punjab, Jammu & Kashmir, Himachal Pradesh and Haryana.

Setting

The study was conducted in various medical and surgical units of the institution including Advanced Urology Centre (AUC), Advanced Kidney Unit (AKU), Neurology and Neurosurgery Unit, Special Male Surgical Ward (SMSW), Female Surgical Ward (FSW) and Male Medical Ward (MMW), Cardiology Ward and Cardiothoracic and Vascular Surgery Unit (CTVS Unit).

Sampling technique

Using purposive sampling technique, all the admitted elderly patients meeting the inclusion criteria (patients aged >60 years, admitted for at least 48 hours in the hospital, conscious) were enrolled in the study. The unconscious patients with GCS less than 13 were excluded from the study. So, a total of 201 elderly patients meeting the criteria during the data collection period of 10 days in the month of March 2019 were included in the study.

Tools

Information related to socio-demographic characteristics of the study participants such as: age, gender, religion, education, marital status, spouse, number of children, occupation, residence, living status, housing, source of income, investment schemes and total monthly income were collected in a participant profile sheet.

Katz Index of Independence in Activities of Daily Living (ADL) was used to assess functional status of elderly patients. The Index ranks adequacy of performance in the six functions of *bathing, dressing, toileting, transferring, continence, and feeding*. Patients were scored on yes/no criteria for independence in each of the six functions. A score of 6 indicates full functions, 4 indicate moderate impairment, and 2 or less indicates severe functional impairment". The reliability of the tool based on Cronbach's alpha for the present study is 0.921.⁷

The perceived social support of the admitted elderly patients was assessed by using Multidimensional Scale of Perceived Social Support (MSPSS).^{8,9} It includes 12 items which cover three dimensions of social support; 'Family', 'Friends' and 'Significant others'. Each item is rated on a seven-point Likert-type response format (1 = very strongly disagree; and 7 = very strongly agree). A total score is calculated by summing the results for all the items. The possible score range is between 12 and 84, the higher the score, the higher the PSS. In addition, separate subscales can be used by summing the responses from the items in each of the three dimensions. The possible score range for the subscales/dimensions is between 4 and 28.⁹ The reliability of the tool based on Cronbach's alpha for the present study is 0.876.

The ethical clearance was sought from the Ethical Committee of the National Institute of Nursing Education which is a part of PGIMER, Chandigarh. Permission to conduct study was obtained from those in charge of the concerned areas. The study participants were informed about the study and an informed written consent was obtained. Anonymity and confidentiality of the data was ensured. A care was taken not to disrupt the routine activities of the wards/units.

The data was collected over a period of 10 days. Socio-demographic data sheet was administered to the study participants. A structured interview technique was adopted to collect the data. The data was coded and entered into Microsoft Excel Sheet. It was then analyzed using the SPSS version 20 using descriptive as well as inferential statistics.

Results

Socio-demographic profile of study participants

Table 1 depicts the socio-demographic characteristics of the study participants. It was observed that about 81% of study participants were in the age group 60-70 yrs while 33% were in the age group 70-80 yrs. 65.2% were males. Majority of them (63.2%) were Hindus. About 33% of the study participants were educated up to primary level while 23.9% were illiterate. Majority of study participants (99.5%) were married while only 79% of them had an alive spouse. 57.7% had 2-4 children while 12.4% had >4 children. Around one third (30%) were retired or housewives while 16.4% were still working to earn their daily living. Majority (63.2%) of the study participants were living with their spouse and children; 28.9% with children only; 5.5% with only spouse; 2% were living alone and 0.5% with their relatives. Majority of the study participants were living in their own house (98.5%) except few (1% and 0.5%) who were living in rented and government accommodation respectively. More than half (52%) of participants were working or had business; while 43.3% had pension/rent as sources of income, out of which the majority (81%) was from pension. Majority (94.5%) of the study participants had not invested in any of the financial schemes. Twenty percent of the study participants had a total income less than Rs. 5000/month.

Table 1: Socio-demographic Profile of Study Participants (N=201)

Variables	Categories	n (%)
Age in years	60-70	162 (80.6)
	70-80	33 (16.4)
	> 80	06 (3.0)
Gender	Male	131 (65.2)
	Female	70 (34.8)
Religion	Hindu	127 (63.2)
	Sikh	66 (32.8)
	Muslim	08 (4.0)
Education	Illiterate	48 (23.9)
	Primary	66 (32.8)
	Secondary	53 (26.4)
	Graduate	24 (11.9)
	Post-graduate	10 (5.0)
Marital status	Married	200 (99.5)
	Unmarried	01 (0.5)
Spouse	Alive	159 (79.1)
	Deceased	42 (20.9)
No of children	< 2	60 (29.9)
	2-4	116 (57.7)
	>4	25 (12.4)
Occupation	Retired	56 (27.9)
	Working	33 (16.4)
	Housewife	56 (27.9)
	Others	56 (27.9)
Residence	Urban	82 (40.8)
	Others ^a	119 (59.2)
Living status	Alone	04 (2.0)
	With children	58 (28.9)
	With spouse only	11 (5.5)
	With relatives	01 (0.5)
	With children and spouse	127 (63.2)
Housing	Own	198 (98.5)
	Rented ^b	3 (1.5)
Sources of income	Self ^c	110 (54.72)
	Pension	74 (36.82)
	Rented Income	13 (6.47)
	Others	4 (1.99)
Investment schemes ^d	Yes	11 (5.5)
	No	190 (94.5)
Total monthly income INR	< 5000	41 (20.4)
	5000-10,000	38 (18.9)
	10,000-20,000	56 (27.9)
	> 20,000	66 (32.8)
^a (Rural, Semi-urban, Slum); ^b (Govt. accommodation); ^c (job, business etc.); ^d (life insurance, medical insurance, fixed deposit schemes etc.)		

Functional Status of the hospitalized elderly patients

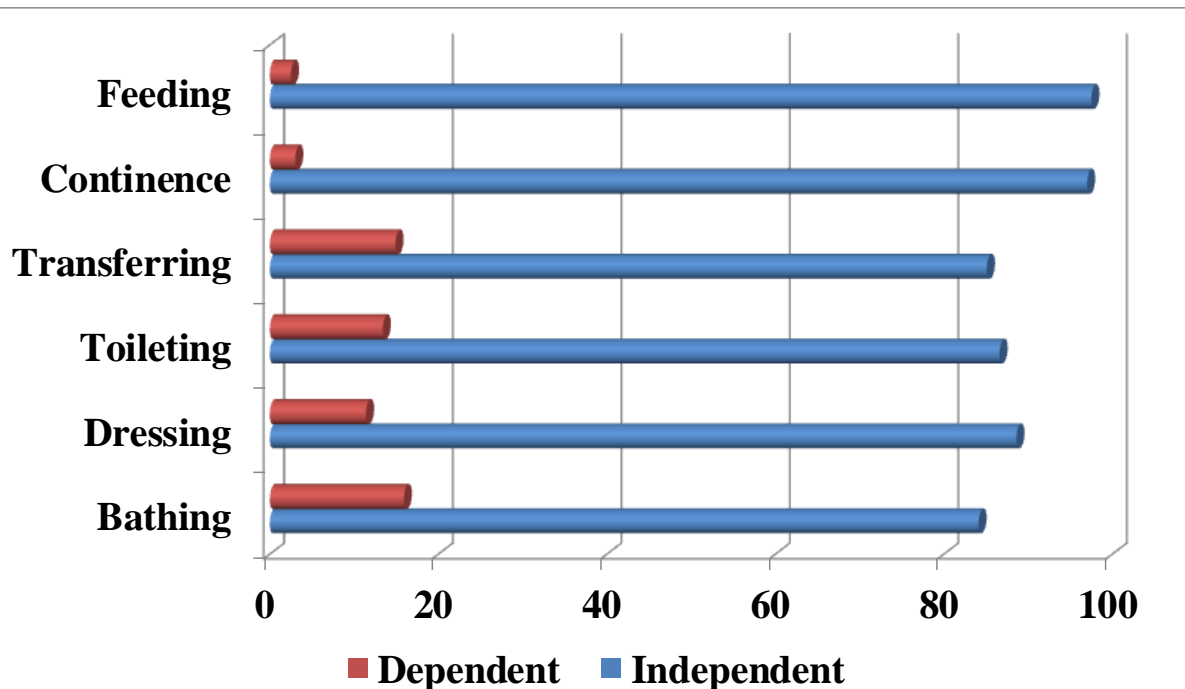
The mean score of functional status of study participants was 5.39 ± 1.43 (range: 0-6). Majority (86.6%) of the participants were fully independent in performing ADL, with around one-tenth (10.9%) had severe functional impairment and only 2.5% had moderate functional impairment.

Fig.1 depicts the functional status of the study participants as per KATZ Index of Independence in ADL. Majority of the participants were able to perform feeding (97.5%)

followed by continence (97%), dressing (88.6%), toileting (86.6%), transferring (85.1%) and bathing (84.1%).

Perceived Social Support of hospitalized elderly patients

It was observed that majority of the participants (79.6%) perceived high social support and 20.4% perceived medium social support as per MSPSS scale. Table 2a depicts the responses of the study participants on different sub-scales of the MSPSS. It has been observed that majority of the participants perceived high social support from 'significant others' (79.6%) followed by 'family'

Fig 1: Functional Status of the participants as per Katz ADL scale (N=201)**Table 2a: Perceived social support by study participants on different sub-scales of the 'Multi-dimensional Scale of Perceived Social Support' (MPSS) (N=201)**

Subscale of MPSS	Significant other* n (%)	Family n (%)	Friends n (%)
Low perceived support	0(0.0)	41(20.4)	160(79.6)
Medium perceived support	1(0.5)	51(25.4)	149(74.1)
High perceived support	9(4.5)	74(36.8)	118(58.7)

*relatives, care-takers, domestic help

Table 2b: Mean score of participants on different sub-scales of the MPSS (N=201)

Subscale of MPSS	Mean \pm SD	Range
Significant Others*	23.06 \pm 2.86	12 – 28
Family	22.68 \pm 2.49	11 – 28
Friends	20.91 \pm 5.45	6 – 28

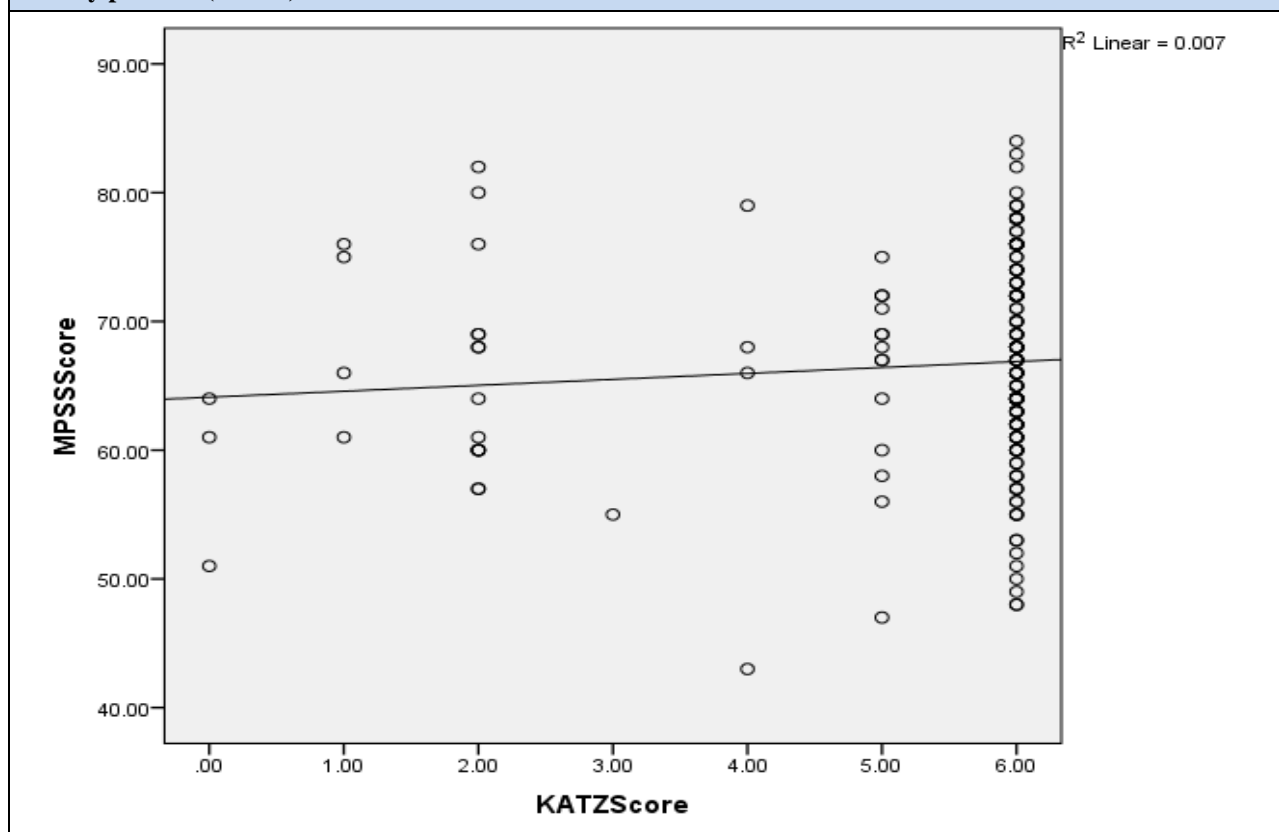
*Relatives, caretakers, domestic help

(74.1%) and 'friends' (58.7%). Table 2b depicts the mean score of the study participants on the different sub-scales of MPSS. The overall mean score obtained by the study participants as per MPSS was 66.6 ± 7.69 (Range 43-84).

Association of perceived social support

The association of overall PSS from family, friends and significant others with the demographic profile of study participants showed significant association with their gender ($\chi^2=9.18$, $df=2$, $p=0.01$), occupation ($\chi^2=18.28$,

$df=6$, $p=0.01$) and total monthly income ($\chi^2=20.53$, $df=6$, $p=0.002$). The association of PSS from significant others with demographic profile of the study participants showed a significant association with their living status ($\chi^2=9.94$, $df=8$, $p=0.04$) and housing ($\chi^2=11.89$, $df=2$, $p=0.003$), while from family showed significant association with their education status ($\chi^2=21.1$, $df=8$, $p=0.007$) and from friends showed significant association with their gender ($\chi^2=9.18$, $df=2$, $p=0.010$), occupation ($\chi^2=18.28$, $df=6$, $p=0.06$) and total monthly income ($\chi^2=20.53$, $df=6$, $p=0.02$).

Fig. 2: Scatter plot showing relationship between perceived social support and Katz ADL among hospitalized elderly patients (N=201)

Functional dependence and perceived social support

We studied the relationship between functional dependence of the study participants with their overall PSS. It has been observed that the overall PSS is slightly positively correlated with the functional dependence of the study participants [Spearman's rho (r) = 0.086] however it is not found to be statistically significant. Fig. 2 is a scatter plot showing relationship between PSS and Katz ADL among hospitalized elderly patients. It was evident that the dependency level of the admitted elderly for their activities of daily living increased, they received more social support from their family, friends and significant others.

Discussion

The elderly group of the population is one of the most vulnerable and often neglected sections of society. They undergo various physical and psychological changes and thus become physically and economically dependent on their family caregivers to fulfil their daily needs, such as medical, health-related, recreational and other needs. Their children often are more occupied with their own routines and future needs. The problem of support for elderly is further compounded by the demise of spouse, friends and relatives which shrinks their supportive network. All these lead to social isolation, a feeling of loneliness and hopelessness.²

The support system, whether it is social, physical, psychological, financial or instrumental, helps the elderly people to maintain their quality life and often prevents

them from various mental health issues. Unsar et al in a study among Turkish older adults reported positive correlation between social support and quality of life.⁵ The elderly people who lack social support report have subjective feelings of loneliness and experience poor health outcomes across the life course. These elderly individuals become more prone to social threats and thus have reduced ability to engage in maintaining healthy behaviours, which impairs their physiological and immunological functioning over the period of time. Manemann et al reported increased death risk and healthcare use among elderly patients with heart failure who perceived greater social isolation.¹¹ The social support system, thus, plays a significant role, especially for the elderly to improve their quality of life.

The availability of social support system even becomes more important during hospitalization of an elderly individual because there is further deterioration of his/her functional reserves due to the illness. The present study was conducted among 201 hospitalized elderly patients of more than 60 years age, conscious and admitted for at least 48 hours in medical and surgical units of a tertiary care hospital with the objective to explore their dependency level and social support they have during hospitalization from 'family', 'friends' and 'significant others' (i.e. relatives, care-takers and domestic help).

The findings of the current study suggested that majority of the participants were able to perform self-feeding (98%) followed by meeting continence needs (97%), dressing (89%), toileting (87%), transferring (85%) and

bathing needs (84%) and were fully independent (87%) in performing ADL. Sharma S et al also reported that around 82% of the elderly residing in a community were fully functional in the performance of their activities such as bathing, dressing, toileting, transferring, continence and feeding while 16.3% were dependent for the activity of toileting followed by the activities of transferring, dressing, and bathing.¹² However, Burman et al had reported that 32.4% of the older adults were dependent for their basic ADL.¹³ This could be explained by the fact that the data was collected from the community-based elderly aged more than 70 years. However, in the present study majority of the study participants were between 60-70 years of age. Thus, the increasing age revealed increased dependency for the basic ADL.

Further, majority of the participants (79.6%) perceived high social support while only 20.4% perceived medium social support as per MSPSS scale with an overall mean score of 66.6 ± 7.7 (range: 43-84) in the current study. It was observed that social support was maximum from 'significant others' (79.6%) followed by 'family' (74.1%) and 'friends' (58.7%). The findings are in line with report of Taylor et al that frequent support from extended family, family closeness, having fictive kin, number of friends to discuss problems with and contact with neighbors were associated with greater life satisfaction and increased levels of happiness.¹⁴ However, a slight decrease in the PSS could be explained by the changing trend of joint family system to nuclear family system in the India. Majority of the children go away to earn their livelihood leaving the elderly parents alone who have to depend upon their relatives, caretakers, domestic helpers during hospitalization or whenever they need any help.

The overall PSS is found to be associated with gender, occupation and total monthly income of the study participants. The PSS from 'significant others' was associated with their living and housing status, while from 'family' was associated with their education status and from 'friends' was associated with their gender, occupation and total monthly income. The probable reasons for these findings could be that the better educated people with good income might be able to afford hiring domestic helpers and also might be having good friend circle who are ready to help each other in case of any need. These findings are partially consistent with the reports of a study carried out by Melchoirre et al that older people had significant association of PSS with age, educational status, living arrangements, marital status, occupational status and income status.¹⁵ Turagabeci et al have also reported poor health outcomes among small and nuclear family as compared to extended family where presence of companions such as spouse, children and significant others play a major role.¹⁶

The overall PSS is found to be slightly positively correlated with the functional independence of the study participants. Thus, as the dependency level of the admitted elderly for their ADL decreased i.e. they became more independent, they perceived more social support from their family, friends and significant others. This may be explained by the fact that while the caregivers are

engaged in caring the more dependent elderly patients, they experience fatigue and tiredness and thus show disinterest in spending time with them. Similar findings have been reported by Chao et al wherein the elderly with high functional disability along with high activity restriction had low social support.¹⁷ However, Bozo et al also did not reveal any significant effect of ADL on PSS.¹⁸ The National Policy for Older People (1999) encourages families to take care of their old family members and encourages voluntary organizations to supplement the care provided by the family and to provide care and protection to the vulnerable elderly people.¹⁹

Limitation

The responses regarding the social support were the self-expressed responses of the elderly patients under study. An additional objective assessment of social support would have been better.

Conclusion

The study highlighted the role of support, how this is perceived by the elderly and its relationship with ADL and dependency on others. All the elderly hospitalized patients had some kind of social support either from family, friends or significant others. Though the social support perceived from 'significant others' is more as compared to family and friends, the difference was small. It was observed that functionally independent elderly perceived higher social support as compared to functionally more dependent. The implementation of geriatric health policy to provide dignified and good quality life to elderly people is recommended.

Author information: Ruchi Saini: Ph.D, Tutor, National Institute of Nursing Education (NINE), Post-graduate Institute of Medical Education and Research (PGIMER), Chandigarh, 160012, India, ruchisaini716@gmail.com; Amulya Sharma: B.Sc. Nursing, B.Sc. Nursing Intern, NINE, PGIMER, Chandigarh, India, Email: amulyalatta@gmail.com; Gurleen Kaur: B.Sc. Nursing, B.Sc. Nursing Intern, NINE, PGIMER, Chandigarh, India, Email: gurleenaulakh97@gmail.com; Jasman Brar: B.Sc. Nursing, B.Sc. Nursing Intern, NINE, PGIMER, Chandigarh, India, Email: jasmanbrar0127@gmail.com; Neerja Hans: B.Sc. Nursing, B.Sc. Nursing Intern, NINE, PGIMER, Chandigarh, India, Email: neerja2015@gmail.com; Rippandeep Kaur: B.Sc. Nursing, B.Sc. Nursing Intern, NINE, PGIMER, Chandigarh, India, Email: rippandb21@gmail.com; Sukhpreet Kaur: B.Sc. Nursing, B.Sc. Nursing Intern, NINE, PGIMER, Chandigarh, India, Email: sukhpreetks1995@gmail.co.in; Sukhpal Kaur: Ph.D, Lecturer, NINE, PGIMER, Chandigarh, India. sukhpal.trehan@yahoo.in

Correspondence: Sukhpal Kaur: Ph.D, Lecturer, National Institute of Nursing Education, PGIMER, Chandigarh, 160012, India. sukhpal.trehan@yahoo.in

Competing interests: None.

Received: 27 August 2020; **Revised:** 25 November 2020; **Accepted:** 28 November 2020

Copyright © 2020 The Author(s). This is an open-access article distributed under the terms [CC BY-NC] which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Citation: Saini R, Sharma A, Kaur G, Brar J, Hans N, Kaur R, Kaur S, Kaur S. Perceived social support among hospitalized elderly patients in Indian settings. *Journal of Geriatric Care and Research* 2020, 7(3): 133-139.

References

- Sharma D, Kaur M, Chaudhary R, Kaur S, Agnihotri M, Bhalla A. Admission of elderly in emergency units: causes and problems. *Advance Practice Nurs.* 2016; 2(3). DOI: 10.4172/2573-0347.1000119
- Kaur S, Bhalla A, Kumari S, Singh A. Assessment of functional status and daily life problems faced by elderly in North Indian City. *Psychogeriatr.* 2019; 19 (5):419-25. <http://doi.org/10.1111/psyg.12406>.
- Kaur S, Gill A, Sharma U, Singh A. Quality care audit in old age home in North Indian City. *J. Indian Acad. Geriatr.* 2015 March; 11(1): 3-9.
- Mane AB. Ageing in India: some social challenges to elderly care. *J Gerontol Geriatr Res.* 2016; 5(2): e136. <http://dx.doi.org/10.4172/2167-7182.1000e136>.
- Unsar S, Erol O, Sut N. Social support and quality of life among older adults. *Int. J. Caring Sci.* January-April 2016; 9(1): 249-57.
- Hawkey LC, Cacioppo JT. Loneliness matters: a theoretical and empirical review of consequences and mechanisms. *Ann Behav Med.* 2010; 40(2):218–227. doi:10.1007/s12160-010-9210-8
- Katz S, Down TD, Cash HR, Grotz RC. Progress in the development of the index of ADL. *Gerontologist.* 1970; 10(1): 20-30.
- Zimet GD, Dahlem NW, Zimet SG, Farley GK: The multidimensional scale of perceived social support. *J Pers Assess* 1988; 52: 30–41. 10.1207/s15327752jpa5201_2
- Zimet GD, Powell SS, Farley GK, Werkman S, Berkoff KA: Psychometric characteristics of the multidimensional scale of perceived social support. *J Pers Assess.* 1990; 55: 610–617.
- Ekbäck, M., Benzein, E., Lindberg, M., Årestedt K. The Swedish version of the multidimensional scale of perceived social support (MSPSS) - a psychometric evaluation study in women with hirsutism and nursing students. *Health Qual Life Outcomes.* 2013 Oct 10; 11 (168). <https://doi.org/10.1186/1477-7525-11-168>
- Manemann SM, Chamberlain AM, Roger VL, Griffin JM, Boyd CM, Cudjoe TKM et al. Perceived social isolation and outcomes in patients with heart failure. *J Am Heart Assoc.* 2018 May 23; 7(11): e008069. doi: 10.1161/JAHA.117.008069.
- Sharma S, Thakur M, Kaur S. Assessment of functional status in the performance of activities of daily living amongst elderly in sub-urban population of India. *Int. J. Nurs. Educ.* 2012; 4(1): 94-96.
- Burman J, Sembagamuthu S, Dasgupta A, Paul B, Pawar N, Roy A. Assessment of poor functional status and its predictors among the elderly in a rural area of West Bengal. *J Mid-Life Health.* 2019; 10(3):123-130.
- Taylor RJ, Chatters LM, Hardison CB, Riley A. Informal Social Support Networks and Subjective Well-Being among African Americans. *J Black Psychol.* 2001; 27(4):439–463. doi:10.1177/0095798401027004004
- Melchiorre MG, Chiatti C, Lamura G, Porres-Gonzales F, Stankumas M. Social support, socio economic status, health and abuse among older people in seven European countries. 2013. *PloS ONE.* 2009; 8(1):e54856. doi:10.1371/journal.pone.0054856.
- Turagabeci RA, Nakamura K, Kizuki M, Takano T. Family structure and health, how companionship acts as a buffer against ill-health. *Health Qual. Life Outcomes* .2007;5(61).doi:10.1186/1477-7525-5-61.
- Chao SF. Functional disability and depressive symptoms: Longitudinal effects of activity restriction, perceived stress, and social support. *Aging Ment. Health.* 2014 Jan 30;18(6):767-76. doi: 10.1080/13607863.2013.878308.
- Bazo O, Kurum O, Toksabay NE. Activities of daily living, depression, and social support among elderly Turkish people. *J Psychol.* 2009 Mar; 143(2):193-205. doi: 10.3200/JRLP.143.2.193-206
- Paul NS, Asirvatham M. Geriatric health policy in India: The need for scaling-up implementation. *J Family Med Prim Care.* 2016;5(2):242-247. doi:10.4103/2249-4863.192333

Religion and behaviour: relevance during the current COVID-19 pandemic

Sujita Kumar Kar, Shreya Shukla, Vikas Menon, S M Yasir Arafat

Abstract

The COVID-19 pandemic has generated global instability. As the mortality and morbidity figures rise day by day, the routine life has been restricted by significant limitations. Addressing these changes pose another challenge. The role of religion becomes more pronounced in the wake of the ongoing global pandemic, the resulting social distancing rules, and the lockdown imposed, as a common coping mechanism. Religion, however may too have negative impact on the mental health. Recent pandemic had witnessed several religious events, activities and influences of religion on public behaviour, which have both positive and negative effects. This article discusses the influence of religion on human behaviour during emergencies like the COVID-19 pandemic.

Key words

Religion, Behaviour, COVID-19, Pandemic

Introduction

The COVID-19 pandemic has created global chaos. As the mortality and morbidity figures increase day by day, significant limitations have been imposed in the routine life. As mental health is affected adversely due to the direct and indirect impact of the COVID-19 pandemic, attempts are being made to address this critical issue by sensitizing people about effective coping measures.^{1,2} Coping with the restrictions posed and their mental health impact is posing another challenge.

Religion and behaviour: the brighter side

People use various psychological mechanisms or coping methods to deal with distress in challenging situations. Religious coping is one of the various coping measures used to combat stress and the challenges of life. There are some initial arguments that religion is an immature way to deal with life challenges at the time of stress. Subsequent research evidence supports that religion can be positive and a negative way of coping.³ Religious coping may help caregivers of patients to cope in a healthier manner.⁴ As religion is a vital part of a majority of the world

population, it affects our social attitude and our behaviour in day-to-day life. On the one hand, it is known to play a role in wars and intolerance, yet many acts of understanding, empathy, and charity have their roots in religious beliefs.

One might reason – what is the relationship of a virus with religion? Masses are gripped by fear and apprehension regarding the current situation. The need to be in control is natural; the loss of such control over one's life leads to much anxiety. Religion may have some role to deal with the psychological distresses at such times. According to a recent study almost 11-25% of the population of USA is atheist.⁵ These statistics show that a majority of people believe in God. This faith provides a feeling of continuity between the old non-COVID world and the new one we now face in the changing times. Earlier, religion was thought to be negatively associated with health, but their relationship is more intricate, and some positive aspects have also come to the surface.⁶ Research suggests a positive impact of religion on mental health, specifically in terms of happiness and general satisfaction with one's life.⁷ Religion remains a constant entity in the face of adversity.⁸ Formation of a relationship with a spiritual entity, which is at the core of each religion, gives a sense of security and confidence.⁹ It is also seen to affect death anxiety and acceptance of death among people.¹⁰ God is conceptualized as someone who loves all beings unconditionally, which is very comforting for people in such turbulent times;⁹ and believe in God is associated with decrease in death anxiety.¹⁰

Many people have lost jobs and homes during the COVID-19 pandemic and have been left stranded in various places. A lot of religious groups are providing them with basic amenities all over the world. In India, the Gurudwara and Archdiocese of Delhi, Punjab, Haryana, Maharashtra, Uttar Pradesh and Karnataka have been involved in distributing food packets to migrant workers.^{11,12}

Religion and behaviour: the darker side

The association of religion and behaviour is not as rosy as it seems. Although religion is a supporting pillar in the development of resilience, yet it is seen that fanaticism is

harmful. To prevent the spread of COVID-19 infection, social distancing has been recommended and is being practiced worldwide.¹³ Activities that involve large human gatherings include religious activities, funerals, wedding ceremonies etcetera. These activities have been suspended in the wake of the current situation. Prayer meetings and funerals involve singing, physical contact through hand shaking, hugging, sharing food and fomites.¹⁴ As people gather in the religious places to offer prayer, there is a chance of spread of infection due to a breach in the social distancing practice.¹⁵ These factors lead to a sudden surge in number of cases of COVID-19 in various parts of the world. Religious congregation, the Tablighi Jamaat, was alleged to be responsible for more than a thousand cases in both Malaysia and India.¹⁶ A funeral held in ISKON, London was alleged to be responsible for 21 cases of COVID 19.¹⁶ In a locality of orthodox Jews, almost 40% were found to be infected. Such a high rate of infection was related to Jews attending prayer meeting in large numbers on the occasion of Purim. Similarly, in South Korea, among those attending Shincheonji Church of Jesus, more than 5000 were found to be COVID positive.¹⁶ A study conducted in Netherlands, found a strong association between church attendance and hospitalisation rates in COVID-19 patients.¹⁷

Spreading misinformation by various religious leaders among the masses regarding the pandemic is detrimental.¹⁶ Religious leaders implicating that the virus is politically motivated or a satanic entity fighting to abolish the church misleads the people. They are motivated to flout the guidelines issued to control the spread of COVID-19. This has disrupted the control measures in place by the government. Public religious figures have a significant impact on the masses.¹⁵

The impact religious entities have on the public might also be used to spread the word about the measures to be taken to prevent further spread of COVID-19. The World Health Organization (WHO) had appealed to follow specific guidelines and to do the risk assessment of people who attend the religious ceremonies by the religious leaders.¹⁸ The government of India, had also developed a standard operational procedure (SOP) for addressing the spread of COVID-19 in religious places.¹⁹ Similarly, the faith leaders were also instructed to stick to the safety principles in faith-based communities' activities.²⁰

Using religion to strengthen mental health

Religion plays a significant role in shaping the behaviour as well as developing coping mechanisms in the people. The positive effects of religion must be acknowledged. Religion and faith have a powerful influence on human behaviour. Religion facilitates the cultivation of empathy, compassion, and humanity. It may help in instilling hope in difficult times and fostering connectedness.³ Dealing with the larger population and their needs during this COVID-19 pandemic is a challenge of the hour. Researchers and policymakers are working on innovations.²¹ People's religious beliefs can be used as a measure to develop a list of religion-based public health

ideas (e.g. disseminating the awareness through religious leaders) and initiatives, which can be propagated and promoted during these crises. There is a need to control the politicization and sensationalization of events on the basis of religion. It would be beneficial for society at large if public figures and media understand their social responsibilities. Experts must see where religious practices are causing issues in controlling the pandemic and should devise alternative ways around that roadblock for the greater good. On 16th November 2020, the state government of Maharashtra, India had allowed opening of the religious places in the state.²² There is a need to remember the importance of precautionary advisories issued for containment of spread of COVID-19. As many countries in the world, including several states of India are now witnessing the re-emergence of COVID-19 cases in a second wave; any ignorance or laxity in precautionary measures may cause a huge damage.

Conclusion

Religion is an integral part of society. During this COVID-19 pandemic, influence of religion may act like a double-edged sword. There is a need of multi-sectoral co-ordination (between public, religious leaders, government and public health experts) for using religious beliefs and practices in a positive manner supporting the efforts for a successful containment of COVID-19 pandemic.

Author information: Sujita Kumar Kar, MD, Department of Psychiatry, King George's Medical University, Lucknow, 226003, UP, India. E-mail: drsujita@gmail.com; Shreya Shukla, MBBS, Department of Psychiatry, King George's Medical University, Lucknow, 226003, UP, India. E-mail: shreya49shukla@gmail.com; Vikas Menon, MD, Department of Psychiatry, Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER), Puducherry, 605006, India. E-mail: drvmemon@gmail.com; S.M. Yasir Arafat, MD, MPH, MBA, Department of Psychiatry, Enam Medical College and Hospital, Dhaka, 1340, Bangladesh. E-mail: arafatdmc62@gmail.com

Correspondence: Dr. Sujita Kumar Kar, MD, Associate Professor, Department of Psychiatry, King George's Medical University, Lucknow, UP, India. E-mail: drsujita@gmail.com

Competing interests: None.

Received: 21 June 2020; **Revised:** 4 December 2020; **Accepted:** 7 December 2020

Copyright © 2020 The Author(s). This is an open-access article distributed under the terms [CC BY-NC] which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Citation: Kar SK, Shukla S, Menon V, Arafat SMY. Religion and behaviour: relevance during the current COVID-19 pandemic. *Journal of Geriatric Care and Research* 2020, 7(3): 140-142.

References

1. CDC. [Internet] Coronavirus Disease 2019 (COVID-19) Stress & Coping. [cited 2020 May 16] Available from <https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/managing-stress-anxiety.html>
2. Kar SK, Yasir Arafat SM, Kabir R, et al. Coping with Mental Health Challenges During COVID-19. *Coronavirus Dis 2019 COVID-19* 2020; 199–213.

3. Goodman B. [Internet] Faith in a time of crisis. [cited 2020 November 5] Available from <https://www.apa.org/topics/covid-19/faith-crisis>.
4. Pearce MJ. A Critical Review of the Forms and Value of Religious Coping Among Informal Caregivers. *J Relig Health* 2005; 44: 81–117.
5. Gervais WM, Najle MB. How Many Atheists Are There? *Soc Psychol Personal Sci* 2018; 9: 3–10.
6. Seybold KS, Hill PC. The role of religion and spirituality in mental and physical health. *Curr Dir Psychol Sci* 2001; 10: 21–24.
7. Chamberlain K, Zika S. Religiosity, meaning in life, and psychological well-being. *Relig Ment Health* 1992; 138–148.
8. Raghallaigh MN, Gilligan R. Active survival in the lives of unaccompanied minors: coping strategies, resilience, and the relevance of religion. *Child Fam Soc Work* 2010; 15: 226–237.
9. King PE, Benson PL, Wagener L. The handbook of spiritual development in childhood and adolescence. Sage, 2006.
10. Harding SR, Flannelly KJ, Weaver AJ, et al. The influence of religion on death anxiety and death acceptance. *Ment Health Relig Cult* 2005; 8: 253–261.
11. Justice News. [Internet] India Church focuses on marginalized, migrants during coronavirus lockdown. justicenews, [cited 2020 November 16] Available from <https://www.justicenews.co.in/india-church-focuses-on-marginalized-migrants-during-coronavirus-lockdown/>
12. The Indian Express. [Internet] COVID-19: Gurdwaras in Punjab, Haryana, Delhi offer food to needy, open-up rooms for isolation wards. The New Indian Express, [cited 2020 November 16] Available from <https://www.newindianexpress.com/nation/2020/mar/27/covid-19-gurdwaras-in-punjab-haryana-delhi-offer-food-to-needy-open-up-rooms-for-isolation-wards-2122262.html>
13. Milman E, Lee SA, Neimeyer RA. Social isolation as a means of reducing dysfunctional coronavirus anxiety and increasing psychoneuroimmunity. *Brain Behav Immun*. Epub ahead of print 8 May 2020. DOI: 10.1016/j.bbi.2020.05.007.
14. Jaja IF, Anyanwu MU, Iwu Jaja C-J. Social distancing: how religion, culture and burial ceremony undermine the effort to curb COVID-19 in South Africa. *Emerg Microbes Infect* 2020; 9: 1077–1079.
15. Wildman WJ, Bulbulia J, Sosis R, et al. Religion and the COVID-19 pandemic. *Relig Brain Behav* 2020; 10: 115–117.
16. Quadri SA. COVID-19 and religious congregations: Implications for spread of novel pathogens. *Int J Infect Dis IJID Off Publ Int Soc Infect Dis* 2020; 96: 219–221.
17. Vermeer P, Kregting J. Religion and the Transmission of COVID-19 in The Netherlands. *Religions* 2020; 11: 393.
18. WHO. [Internet] Decision tree for risk assessment tool for Religious Leaders and Faith-based Communities in the context of COVID-19, [cited 2020 May 16] Available from <https://www.who.int/who-documents-detail/decision-tree-for-risk-assessment-tool-for-religious-leaders-and-faith-based-communities-in-the-context-of-covid-19>
19. Government of India. [Internet] SOP on preventive measures to contain spread of COVID-19 in religious places/places of worship, [cited 2020 November 17] Available from <https://www.mohfw.gov.in/pdf/2SoPstobefollowedinReligiousPlaces.pdf>
20. WHO. [Internet] How to Protect yourself : Keeping People Safe: What Faith Leaders Can Do, [cited 2020 May 16] Available from <https://www.who.int/southeastasia/outbreaks-and-emergencies/novel-coronavirus-2019/protective-measures/message-for-faith-leaders>
21. Srivastava V. [Internet] Indian scientists wage frontline battle against coronavirus, [cited 2020 June 17] Available from <https://www.natureasia.com/en/nindia/article/10.1038/nindia.2020.56>
22. Hindustan Times. [Internet] Religious places in Maharashtra to reopen on November 16. Hindustan Times, [cited 2020 November 17] Available from <https://www.hindustanimes.com/india-news/religious-places-in-maharashtra-to-reopen-on-november-16/story-mPBuAboVBvJjflyhsSgGCJ.html>

COVID-19 pandemic and care of elderly: measures and challenges

Shree Mishra, Rosali Bhoi, JP Russel Ravan, Santanu Nath, Nilamadhab Kar, Susanta Kumar Padhy

Abstract

The on-going COVID-19 pandemic has compromised the physical and mental health of elderly in a complex way. The elderly population, with multiple medical comorbidities and cognitive challenges, are more vulnerable towards increased infection and mortality secondary to COVID-19. This article reviews the multifaceted challenges (physical vulnerability, access to health services, stigma, “infodemic”, lack of social support, employment issues, elderly staying with vulnerable family members and others) concerning the elderly population, since the emergence of the pandemic. It also explores the practical solutions to prevent and contain infection, which may alleviate the physical, mental and social aftermath of the pandemic in this population. The convolution around ageism and frailty compounded with social isolation is likely to worsen the overall outcome of elderly during the pandemic. Adequate preparation, control of comorbid medical illness, infection prevention strategies and parallel measures to safeguard mental health are the integrated approaches towards a better outcome during COVID-19 pandemic. Striking a balance of humane, inclusive and holistic approach will safeguard this subset of population.

Key words

Aged, COVID-19, Health care, Informal Care, Mental health, Pandemic

Introduction

Amidst the changing trajectory of the COVID-19 pandemic, where the cure is still elusive the infection has taken a disproportionate toll on health of elderly with associated age related diseases. This age group is vulnerable to COVID-19 infection which runs a fulminant course often resulting in multiple organ failure, requirement of ventilator support, residual respiratory compromise and higher rates of mortality in comparison to younger adults.¹ The associated mental health outcomes arising from the indispensable precautionary measures to curtail the risk of infection has its own disadvantages.² The issues around ageism and frailty can

influence the help seeking, polarisation of health services and a disruption of the economic, social and health outcome of elderly during the pandemic.³

This article discusses the various challenges (physical vulnerability, access to health services, stigma, “infodemic”, lack of social support, employment issues, elderly staying with vulnerable family members and others) in safeguarding physical and mental health of older adults during this pandemic and explores feasible measures to mitigate infection risk and improve overall outcome.

Physical vulnerability to COVID-19

Due to better longevity many countries are witnessing a shift in population structure with increased aged population. The Centres for Disease Control and Prevention (CDC) data from USA and China suggest that nearly half of the facilities of Intensive Care Unit (ICU) was needed for elderly; and death related to COVID-19 infection in those above 65 year was more than 80%.⁴ With increase in the aged population, the cumulative risk of lifestyle diseases like diabetes, hypertension, cardiovascular, kidney and respiratory diseases, strokes have increased. Around 20-50% patients with COVID-19 have diabetes mellitus. Often the elderly are on poly-pharmacy regimens; including angiotensin converting enzyme (ACE) inhibitors and angiotensin-receptor blockers (ARBs) that upregulate the ACE-2 receptor. Thus it is hypothesized that older individuals with such comorbidities may have an elevated risk for the severe course of infection with SARS-CoV-2. Obesity, poor nutritional state, substance addiction, late onset depression and frailty in elderly can further compromise their overall health status. Neurodegenerative disorders, visual and hearing impairment, mobility limitations impacts many aspects of prevention, including acknowledging health issues and seeking timely help. This subgroup of elderly can have under-recognised malnutrition, dehydration, bedsores and deranged metabolic parameters.^{5,6} Uncontrolled use of over the counter (OTC) drugs and herbal remedies in some regions can adversely affect the already compromised physiological functions and may have unwarranted adverse reactions.

Lockdown and its impact on elderly

Availing health services during lockdown

As soon as the pandemic was acknowledged, many countries implemented nationwide lockdown limiting public movement and socialisation, as a measure to contain the risk of infection spread. Eventually the lockdowns were uplifted in a phasic manner. The need to protect the aging population was emphasised at each phase. However, these restrictions partly served to amplify the already existing disparity of health care services, hassles in assessing ongoing lifesaving procedures in elderly like dialysis, chemo and radiation therapy. Many local drug stores were closed which resulted in disruptions in supply of routine essential medications. Limited availability of public transport system prevented many to visit the destined pharmacy or hospital. Many with lifestyle diseases had to refrain from doing regular outdoor exercises. Many hospitals were converted to 'COVID only' centres and routine health care witnessed disruption although transient in most cases, only to re-emerge as tele services via apps or e-platforms. Even in hospitals, difficult clinical and ethical decisions on triaging and lifesaving procedures were impacted by frailty of the older adults as resources are finite.⁷ The emergence of second and third wave, and the new strain of SARS-COV-2 infection has further puzzled the lives of this population.

Loss of social contact and employment

Nuclear family trend is emerging across regions of world including lower and middle income (LAMI) countries. Most elderly are at home alone; and often this issue is further compounded for separated or widowed older persons. 'Loneliness', a subjective perception of lack of meaningful relationships and 'social isolation', loss of social engagements and contacts are rather ignored but play an important role in physical and mental health. Restriction in social functioning is commonly associated with vulnerability to ill health, geriatric depression and premature mortality.⁸ The containment measures in the pandemic related social distancing often translated to a complete social alienation of the elderly. Limited visits by family members, informal or formal carers, indirect stigma associated with the age related vulnerability to COVID-19, and restriction of movement have constricted numerous avenues of the social life of elderly for a considerable duration.

A considerable proportion of older adults had to face job layoffs or pause in their existing employment leading to decreased earning resources in the current pandemic. A recent survey by HelpAge India revealed that 65% of elders are facing livelihood challenges in face of pandemic.⁹ Elderly migrant labourers, homeless mentally ill and destitute people were hit hard during the pandemic. Physical limitation, malnutrition, travelling long distance on foot brought out the issue of 'survival of the fittest' very much into reality. The social structure destabilised overnight exposing the most vulnerable people to plethora of disadvantages.

Many senior physicians and other health care workers (HCW) worked and volunteered during the pandemic. However job related precautions for this age group was not clear at many levels of health care system at least initially. There were additional issue of lack of appropriate personal protective equipment (PPE), inadequate planning, and lack of resources. Many elderly physicians and HCWs were at a higher risk category due to longer hours of exposure to possible risk of infections and comorbid metabolic diseases. Fear of infection, quarantine/isolation and burnout are common across different age range of HCW. However the older adults as HCW have higher risks of death due to COVID-19.¹⁰

Lockdown is being eased and countries are rebuilding on job and economic opportunities. Elderly will always remain the "weakest link" in preference for jobs as ageism related discrimination is deep rooted across countries.

Stigma and COVID-19 in elderly

The COVID-19 pandemic uncovered the psychosocial and environmental milieu which is largely ageist. As such there is lack of disabled- or elderly-friendly services for transport, medication delivery, jobs, marketplace and even hospitals. This issue is further important in LAMI countries, where a big urban and rural divide exists in terms of accessibility of facilities. The initial few months of COVID-19 pandemic were seen as a 'problem predominantly cantering older adults' and a social amputation of the aging population was perceived as the easiest solution. The stigma associated with suspected COVID-19 infection led many essential service providers to refuse to cater elderly citizens.¹¹ A majority of elderly are seen as redundant with a preconceived therapeutic nihilism in major walks of life. Nursing homes were abandoned by caretakers during initial period of pandemic where elderly succumbed to avoidable health crisis. Instances of neglect, abuse, disruption in ongoing care can masquerade as the 'necessary distancing to safeguard the elderly'. Acknowledging the helplessness, anxiety, guilt of passing on infection to near ones and inability to be with their loved ones in final moments, denial of a decent burial/crematory last rites were issues which further complicated the understanding the nature of grief and closure experienced during this pandemic.

'Infodemic' during COVID-19 pandemic

The information overload, wrong information about the pandemic and limited access to evidence based sources in a backdrop of reduced cognitive processing of elderly played a major source of exaggerated health related concerns.³ Pandemic has brought on huge economic loss for the society and misinformation makes it worse. It impacts life in various different ways. Following authentic sources of information from trusted sources should be helpful.¹² Limiting exposure to exaggerated and fake information from print and electronic sources can reduce the anxiety and preoccupation. There is a role and responsibility of media to have a balanced approach to safeguard the physical, psychological and social wellbeing of society.

General precautionary measures

The necessary infection control measures like wearing masks, hand-hygiene, social distancing are the cornerstone of the infection containment. Encouraging indoor routines, exercises, Yoga, relaxation and healthy diet plan, hobbies and promoting a positive mental health may build resilience in elderly to sustain their wellbeing during the pandemic. Enabling elders in decision making and involving them in family affairs, planning ahead, teaching new technology and smartphone usage and appreciating their effort can render a sense of belonging and contribution.¹³

Spiritual wellbeing is one aspect of complete mental wellbeing. Often it is associated with a sense of subjective wellbeing. Fostering or engaging elderly in various means of spirituality can help lower the anxiety, distress, and increase the positive coping ability of people and serve as a source of strength, comfort and hope and sense of control.¹⁴ Mindfulness exercises as a day to day practice may alleviate some of the doomsday and 'end of world' feelings. As Bhagwat Gita puts it - 'it is our anticipation of outcome and desire to control that creates a state of unrest; but what one should do is just to continue their respective duties' i.e. mindful engagement in duty / activities may help in dealing with the situation, rather than remaining worried about possible outcomes. Submitting the apprehensions and sharing it for a larger cause may regenerate inner harmony and tranquillity in difficult life situations.

Role of family and caregivers

Elderly staying with family

Frail older individuals need a stepped up care. It is a challenging task to prevent infection transmission while catering to their day to day needs and supporting their activities of daily living. Multiple caregivers should be avoided as far as possible and only a few family members should be designated for these tasks. Healthy nutrition, regular checking of metabolic parameters and areas of body prone to bedsores are important.^{15,16} Bluetooth enabled cameras with consent can be installed to avoid frequent entry in their rooms. Outings to risky areas or visits by others should be avoided. Keeping medications in stock and having emergency health services contact are needed.

Family members who are directly involved in COVID care in community or hospitals need to take extra precautions if they share the same housing with elderly. Strict social distancing, avoiding intermixing of laundry, frequent hand and respiratory hygiene, cleaning frequently touched surfaces with disinfectants and avoiding co-habitation during active COVID duty (for HCW) or quarantine can bring down exposure to the elderly member to some extent.¹⁵

Elderly living alone (staying far from their family or don't have family)

The family members staying away from the elderly can still keep a check on them through regular calls or e-

mails/messages.¹⁷ Empowering these individuals by storing important contact numbers including relevant helpline numbers in their speed dial list in telephone can serve as a ready access to connect in emergencies. Many governments have launched COVID tracking mobile phone applications such as Arogya Setu (India), HaMagen (Israel), NHS smartphone app (England), TraceTogether (Singapore).¹⁸ These apps help the users know if they have recently come in contact with anyone who tested positive, helps monitor symptom and have instruction for home quarantine.

In care homes, caregivers need to be extra-vigilant to detect early potential threats of contracting the infection or signs of infection, especially where maintaining social distance is difficult, there are staff-shortages or inadequate supervision. It is better for the care home staffs to be trained for putting intravenous lines and oxygen administration in case of emergencies, in addition to the basic first aid. An advanced care plan should be in place after discussion with the inmates and this would make care delivery much swifter. This should involve informing and emphasizing the plan to everyone involved in the care homes and empanelling nearby hospitals; this may avoid major hurdles and chaos. Face to face calls with family and usual friend circle might ease the anxiety and panic.¹⁶ A network of some close friends of the family who stay near the elderly can routinely keep a check, run errands or restock the essentials when necessary. Unnecessary medical visits to hospitals can be postponed; instead telemedicine services can be utilised.¹⁷

Elderly who test positive for COVID-19

Given the seriousness of the illness progression, early symptoms of COVID-19 must not be neglected and a proactive testing is required. Preparing the elderly psychologically without generating panic should go hand in hand; which may require repeatedly informing and explaining about the meaning of test results, need for isolation, symptoms, possible treatment options, indications for hospitalisation etc. Reassuring them time and again via telephonic contact is a feasible option for family members who live away from the elderly or when adhering to the local government norms of isolation. This can mitigate the feeling of 'being left on their own'. Use of over the counter preparations or any self-medication should be in accordance with the professional medical guidelines. List of medications and medical conditions should be thoroughly communicated to the medical team attending the patient in isolation. This will aid the treating doctor to take a balanced decision, minimise drug interactions.

Conclusion

The presentation of COVID-19 is most severe in elderly population across the globe. It is often complicated by associated medical comorbidities, frailty, compromised immunological status. The necessary containment measures for infection control come with an impact on mental and social wellbeing of the elderly. Various strategies can be adopted to address the issues related to

social isolation, seamless continuation of existing medical treatments, managing COVID-19 infections as and when they occur and to support the recovery process in the elderly who are the most vulnerable group. Support systems for the elderly should take holistic care of mental and physical health while safeguarding them against ill-treatment and abuse. These should be humane, have a balanced approach and take into consideration of the views of the elderly, while instituting scientific, evidence-based methods.

Author information: Shree Mishra, MD, Assistant Professor, Department of Psychiatry, All India Institute of Medical Sciences (AIIMS), Bhubaneswar, India. Email: psych_shree@aiimsbhubaneswar.edu.in; Rosali Bhoi, MD, Senior Resident, Department of Psychiatry, All India Institute of Medical Sciences (AIIMS), Bhubaneswar. Email: rosalibhoi24aug@gmail.com; JP Russel Ravan, MD, DPM, Associate Professor, Department of Psychiatry, Kalinga Institute of Medical Sciences (KIMS) Bhubaneswar. Email: jpr_219@yahoo.co.in; Santanu Nath, MD, DNB, Assistant professor, Department of Psychiatry, All India Institute of medical Sciences (AIIMS), Bhubaneswar. Email: betasantanu@gmail.com; Nilamadhav Kar, MD, DNB, DPM, MRCPsych, Consultant Psychiatrist and College Tutor, Black Country Healthcare NHS Foundation Trust, Wolverhampton, UK, Email: n.kar@nhs.net; Susanta Kumar Padhy, MD, Additional Professor & Head, Department of Psychiatry, All India Institute of medical Sciences (AIIMS), Bhubaneswar. Email: psych_susanta@aiimsbhubaneswar.edu.in

Correspondence: Dr. Susanta Kumar Padhy, MD, Additional Professor & Head, Department of Psychiatry, All India Institute of medical Sciences (AIIMS), Bhubaneswar. Email: psych_susanta@aiimsbhubaneswar.edu.in / susanta.pgi30@yahoo.in

Competing interests: None.

Received: 5 July 2020; **Revised:** 26 December 2020; **Accepted:** 26 December 2020

Copyright © 2020 The Author(s). This is an open-access article distributed under the terms [CC BY-NC] which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Citation: Mishra S, Bhoi R, Ravan JPR, Nath S, Kar N, Padhy SK. COVID-19 pandemic and care of elderly: measures and challenges. Journal of Geriatric Care and Research 2020; 7(3): 143-146.

References

- Kar N. Covid-19 and older adults: in the face of a global disaster. Journal of Geriatric Care and Research 2020; 7(1): 1-2
- Wang L, He W, Yu X, Hu D, Bao M, Liu H, et al. Coronavirus disease 2019 in elderly patients: Characteristics and prognostic factors based on 4-week follow-up. Journal of Infection. 2020 Jun;80 (6):639–45.
- Bannerjee D. Age and ageism in COVID-19: Elderly mental health-care vulnerabilities and needs. Asian Journal of Psychiatry. 2020; 51, 102154.
- CDC COVID-19 Response Team. Severe Outcomes Among Patients with Coronavirus Disease 2019 (COVID-19) - United States, February 12-March 16, 2020. MMWR Morb Mortal Wkly Rep. 2020 Mar 27;69(12):343-346. doi: 10.15585/mmwr.mm6912e2.
- Polidori MC, Maggi S, Mattace-Raso F, Pilotto A. The unavoidable costs of frailty: a geriatric perspective in the time of COVID-19. Geriatric Care 2020; volume 6: 8989. doi:10.4081/gc.2020.8989
- Liu K, Chen Y, Lin R, Han K. Clinical features of COVID-19 in elderly patients: A comparison with young and middle-aged patients. J Infect. 2020;80(6):e14-e18.
- Hubbard RE, Maier AB, Hilmer SN, Naganathan V, Etherton-Beer C, & Rockwood K. Frailty in the face of COVID-19. Age and ageing, 2020, 49(4): 499–500. <https://doi.org/10.1093/ageing/afaa095>
- Cacioppo JT, Hughes ME, Waite LJ, Hawkley LC and Thisted RA. Loneliness as a specific risk factor for depressive symptoms: Crosssectional and longitudinal analyses. Psychol. Aging 2006, 21: 140–151. doi: 10.1037/0882-7974.21.1.140
- India TV. Covid-19 lockdown affected lives of 65% elderly due to job loss: Report [Internet] 2020. [cited 2020 Dec 26] Available from: <https://www.indiatvnews.com/news/india/covid-19-lockdown-affected-lives-of-65-per-cent-elderly-due-to-job-loss-report-626351>
- Bruine de Bruin W, Age differences in COVID-19 risk perceptions and mental health: Evidence from a national US survey conducted in March 2020. J Gerontol B Psychol Sci Soc Sci. 2020. doi:10.1093/geronb/gbaa074
- Sotgiu G, Dobler CC. Social stigma in the time of coronavirus disease 2019. Eur Respir J 2020; 56: 2002461. doi: 10.1183/13993003.02461-2020.
- Hudson J. Coping with information overload in the COVID-19 age: a compilation of trustworthy information sources. Journal of Geriatric Care and Research 2020, 7(1): 43-46
- World Health Organization. [Internet] Mental health and psychosocial considerations during the COVID-19 outbreak. [cited 2020 Dec 26] Available from: <https://www.who.int/docs/default-source/coronaviruse/mental-health-considerations.pdf>
- Daaleman TP, Perera S, Studenski SA. Religion, spirituality, and health status in geriatric outpatients. Ann Fam Med. 2004 Jan-Feb;2(1):49-53. doi: 10.1370/afm.20.
- Ministry of Health and Family Welfare. [Internet] Health Advisory for Elderly Population of India during COVID19. [cited 2020 June 10] Available from: <http://www.mohfw.gov.in/pdf/AdvisoryforElderlyPopulation.pdf>
- CDC. Here's How You Can Prevent The Spread Of The Virus In The Elderly Population [Internet] 2020. [cited 2020 June 30] Available from: <https://www.cdc.gov/coronavirus/2019-ncov/specific-groups/high-risk-complications/older-adults.html>
- Sundararajan G. Caring for the elderly during the COVID-19 pandemic. [Internet] UNICEF India. 17 April 2020 [cited 2020 June 8]. Available from: <https://www.unicef.org/india/stories/caring-elderly-during-covid-19-pandemic>
- Chaturvedi A. Top -10 apps to track COVID-19. [Internet] 18 April 2020. Geospatial world. 2020 [cited on 2020 July 18] Available from: <https://www.geospatialworld.net/blogs/popular-apps-covid-19/>

Information Capsule

Healthy Ageing 2020: International Conference

Healthy Ageing 2020, International Conference was held on 8 August 2020 online through as a webinar, considering the COVID-19 pandemic. It was attended by more than 500 delegates. Along with older persons and their caregivers, there was a major presence of professional attendees from all over the world this year.

Topics and speakers

Promotion of a dementia-friendly community and extension of healthy life expectancy in Japan: **Yohko Maki**, MA, PhD, Chief of the Education and Innovation Center, National Center for Geriatrics and Gerontology, Japan.

Approaches to reduce the incidence of cognitive decline and dementia: **David Jolley**, BSc, MSc, DPM (London and Manchester), MBBS, MRCS, LRCP, FRCPSych, The University of Manchester. Patron of Dementia Pathfinders, and Vice Chair of Christians on Ageing <https://christiansonageing.org.uk/>.

Ageing Joints: **Gopala Krishna Pemmaraju**, MBBS, FRCS Gen., FRCS Tr & Orth, Dip SICOT Ortho, SIOCT, MSc Trauma, Consultant Trauma and orthopaedic Surgeon, Clinical Lead For Fracture neck of femur service, Royal Wolverhampton NHS Trust, New Cross and Cannock chase Hospitals, UK.

Prevention is better than cure- is this true for Type 2 Diabetes?: **Biswa Mishra**, MBBS, MD, FRCP, Consultant Physician and Clinical Lead for Endocrinology & Diabetes at the Oldham Care Organisation, Northern Care Alliance NHS Group in United Kingdom.

Preventing late life depression and suicide: A Public health priority: **P T Sivakumar**, MD, Professor Geriatric Psychiatry Unit, in the Department of Psychiatry, National Institute of Mental Health and Neurosciences (NIMHANS), Bangalore, India.

Knowing the self could prepare us to age in happiness: **Saamdu Chetri**, PhD, Visiting Professor, at Rekhi Centre of Excellence for the Science of Happiness, IIT Kharagpur, West Bengal, India.

Moderators

Nilamadhab Kar, MD, DPM, DNB, MRCPsych, Consultant Psychiatrist and College Tutor, Black Country Healthcare NHS Foundation Trust, Wolverhampton, UK. **Prasanta Mohapatra**, MD, Senior Consultant Psychiatrist, District Headquarter Hospital, Cuttack, India. **Susanta Kumar Padhy**, MD, Additional Professor

& Head, Department of Psychiatry, All India Institute of medical Sciences (AIIMS), Bhubaneswar, and Additional Professor, Department of Psychiatry, PGIMER, Chandigarh, India. **Tushar Kanti Das**, MD, Director (Medical Services), TRL Krosaki Refractories Limited, Belpahar, India. **Aparna Prasanna**, MRCPsych, Consultant Psychiatry in Old Age, Black Country Healthcare NHS Foundation Trust, Wolverhampton, UK

Panini Samman

The 2020 Panini Samman was given to **Shri Dhaneswar Sahoo**, who is a renowned author, social activist and thinker in Odisha, India. He is an author of around 25 books in Odia and English including Strawson's Concept of Descriptive Metaphysics, Philosophy Society and Culture, Understanding Life and Rationalism, *Bharatare Jatipratha* (Casteism in India), etc. He has been a forerunner in setting up Odisha Rationalist Society and Humanist - Rationalist Organisation, Odisha.

Management

Dr Susmit Roy, MD, DNB, The Institute of Insight, UK, **Dr Suresh Rath**, PhD, DSc, CIFA, Bhubaneswar, **Mrs Sasmita Kar**, MSc, PGDDE, QoLReF, UK, **Dr Brajaballav Kar**, PhD, Kalinga Institute of Industrial Technology, Bhubaneswar; **Dr Namita Rath**, PhD Sri Sri University, Cuttack, India; **Dr Anupama Senapati**, PhD, Kalinga Institute of Industrial Technology, Bhubaneswar, **Mr Shreyan Kar**, MBChB student, Birmingham Medical School, Birmingham University, UK, **Mrs Gaye Johnson**, Black Country Partnership NHS Foundation Trust, UK, **Mr Antaryami Upadhyaya**, MTech, The Institute of Insight, London, UK.

Support

The Healthy Ageing conference was conducted by the Geriatric Care and Research Organisation (**GeriCaRe**) in partnership with Quality of Life Research and Development Foundation (**QoLReF**) and **The Institute of Insight**, United Kingdom. The conference was free for all to attend. The web platform for the conference was supported by **INTAS**, India. **GenX Studios**, Bhubaneswar provided audio-visual support.

Tanaya Kar, Bachelor of Design Student, National Institute of Fashion Technology (NIFT), Bhubaneswar, 751024, India; Email: kartaniya234@gmail.com

Creative Expressions

Tree

Subha Das



After retirement from a busy medical life, among few hobbies, painting was one of them. Landscape painting was one of my favourites. Living in scenic Scotland, I had enough to paint. But then, traveling to various parts of the world became a regular hobby and addiction.

During the visits, one thing most attracted my eyes were the beauty of different kinds of exotic trees and their looks in different times of the year. Some trees are different in shapes, sizes, covered with flowers or heavy with fruits. Some trees also simply look attractive because of lovely foliage. Some are unique to different countries like tropical, subtropical etc. This inspired me to draw and paint various attractive trees which are only unique to those weathers.

Some retired people and nature lovers join walking groups with an interest in walking in woodlands. They enjoy talking to each other, enjoy the changes in these

trees in different seasons and explore. This helps them to spend time, exercise, fresh air which are very therapeutic for their health and wellbeing. It is also refreshing to clear their heads in time of depression, stress and anxiety. I love to paint trees particularly at the time of autumn, when some trees look vibrant in their colours.

This tree is called "Divi Divi" tree, from the island of Aruba (Caribbean). It was painted in acrylic on canvas.

Artist information: Subha Das, MBBS, MD, MFFP, FRCOG

Correspondence: Dr Subha Das, Dundee, Scotland, United Kingdom.
Email: drsubhadas@gmail.com

Copyright © 2020 Subha Das

Citation: Das S. Tree. Journal of Geriatric Care and Research, 2020, 7(3): 148.

Manuscript Preparation

Instructions for authors

Introduction

The *Journal of Geriatric Care and Research (JGCR)* is the official publication of Geriatric Care and Research Organisation (GeriCaRe). The *JGCR* publishes original work in all fields of geriatrics, contributing to the care of elderly. Theme based special issues focusing one aspect of care are also published periodically. Manuscripts for publication should be submitted via email <jgcr.gericare@gmail.com>.

The *JGCR* is not responsible for statements made by authors. Material in the *JGCR* does not necessarily reflect the views of the Editors or of GeriCaRe.

Editorial process

The *JGCR* follows in principle the Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals by the International Committee of Medical Journal Editors (ICMJE) and the Committee on Publication Ethics (COPE).

Contributions for *JGCR* are accepted for publication on the condition that their substance (whole or part) has not been published or submitted for publication elsewhere, including internet. If there are other papers from same database, then the authors must send all details of previous or simultaneous submissions.

All submitted articles are peer reviewed. At the first step, the articles are assessed by the editorial board for its suitability for the formal review.

If found suitable, the manuscripts undergo a double-blind peer review. The suggestions received from reviewers are conveyed to the corresponding author. When appropriate, the author is requested to provide a point by point response to reviewers' comments and submit a revised version of the manuscript.

Manuscripts accepted for publication are copy-edited to improve readability and to ensure conformity with *JGCR* style.

Authorship

Authorship credit should be based only on substantial contribution to:

- Conception and design, or analysis and interpretation of data
- Drafting the article or revising it critically for important intellectual content, and
- Final approval of the version to be published

All these conditions must be met. Participation solely in the collection of data or the acquisition of funding does not justify authorship. In addition, the corresponding author must ensure that there is no one else who fulfils the criteria but has not been included as an author.

Group authorship is permitted, but in this case individual authors will not be cited personally.

If a professional medical writer was used for manuscript preparation, their name and contact details must be given in the acknowledgement and any conflicts of interest must be disclosed.

The corresponding author must sign the contributors form on behalf of all the authors, once a manuscript has been accepted. This author must take responsibility for keeping all other named authors informed of the paper's progress.

Unless otherwise stated corresponding author will be considered as the guarantor of the article. However one or more authors/contributors can be guarantor. The guarantor accepts full responsibility for the work and/or the conduct of the study, had access to the data, and controlled the decision to publish.

Declaration of competing interest

All submissions to the *JGCR* (including editorials and letters to the Editor) require a declaration of competing interest. This should list fees and grants from, employment by, consultancy for, shared ownership in, or any close relationship with, at any time over the preceding three years, an organisation whose interests may be affected by the publication of the paper.

Ethics approval of research

The *JGCR* expects authors to follow the [World Association's Declaration of Helsinki](#) and base their article on researches conducted in a way that is morally and ethically acceptable. The research protocol must have

been approved by a locally appointed ethics committee or institutional review board.

Every research article must include a statement that the investigators obtained ethical approval for the study (or an explanation of why ethical approval was not needed) in the methods section of the manuscript with the name and location of the approving ethics committee(s).

Patient consent and confidentiality

A statement regarding informed consent must be included in the methodology. Studies involving humans must have written informed consent from the patients. Where the individual is not able to give informed consent for lack of mental capacity, it should be obtained from a legal representative or other authorised person. If consent cannot be obtained because the patient cannot be traced then publication will be possible only if the information can be sufficiently anonymised. Anonymisation means that neither the patient nor anyone could identify the patient with certainty. Such anonymisation might, at an extreme, involve making the authors of the article anonymous. If the patient is dead, the authors should seek permission from a legal representative or other authorised person as a matter of medical ethics.

The authors should check the specific laws in their country. Contributors should be aware of the risk of complaint by individuals in respect of breach of confidentiality and defamation; and must archive the signed informed consent form.

The process used to assess the subject's capacity to give informed consent and safeguards included in the study design for protection of human subjects should be mentioned.

Publication Ethics

Authors should consider all ethical issues relevant to publication. This includes (but not restricted to) avoiding multiple submission, plagiarism and manipulation of figures/data. Any concerns in this regard must be brought to the attention of the Editor and these will be investigated by procedures recommended by the Committee on Publication Ethics (COPE). If conclusive evidence of misconduct is found, the *JGCR* undertakes to publish a correction or retraction of article as necessary.

Clinical trial registration

All clinical trials must be registered in a public trials registry. This is a requirement for publications of the trials.

Qualitative research

The *JGCR* welcomes submissions of reports of qualitative research relevant to the scope of the care of elderly.

Type of manuscripts

Research article

The research article should normally be between 3000 and 4000 words in length (excluding references, tables and figure legends). Only the essential references should be given, preferably not more than 25 beyond those describing statistical procedures, psychometric instruments and diagnostic guidelines used in the study. Authors are encouraged to present key data within smaller tables in the appropriate places in the running text. This applies also to review articles and short reports.

A structured abstract not normally exceeding 150 words should be given at the beginning of the article, incorporating the following headings: Background, Aims, Method, Results, and Conclusions.

Key words: Up to six key words should be provided. Please use Medical Subject Headings ([MeSH](#)) as key words.

Article should have Introduction, Method, Results and Discussion sections. Authors may use relevant subheadings under these sections. Introductions should normally be no more than one paragraph; longer ones may be allowed for new and unusual subjects. The Discussion should always include limitations of the paper to ensure balance. A paragraph of practical implications of the observations is encouraged.

Short report

Short reports (brief communications) are based on original research, observational or evaluation studies, clinical audits etc. These are structured as research articles and require an unstructured abstract of one paragraph, not exceeding 100 words. The report should not exceed 1500 words (excluding references, tables and figure legends) and contain no more than one figure or table and up to 10 essential references beyond those describing statistical procedures, psychometric instruments and diagnostic guidelines used in the study.

Case report

Case reports and series require up to 100 word abstract, and the length should not exceed 1000 words (excluding references, tables and figure legends). The written informed consent of the individuals must be obtained and submitted with the manuscript. Please refer to patient consent and confidentiality paragraph for further detail. In general, case studies are published in the *JGCR* only if the authors can present evidence that the case report is of fundamental significance and it is unlikely that the scientific value of the communication could be achieved using any other methodology.

Review

Systematic and narrative review articles should be structured in the same way as research article, but the length of these may vary considerably, as will the number

of references. It requires a structured abstract like that of research articles.

Short review

These articles focus on highly topical issues based on evidence. Professional perspectives, viewpoints, commentary and opinion are included here. It can also include clinical review relevant to the practitioners. These articles are usually more broad-based than editorials. They can include tables and figures. Usual length is around 1500 words (excluding references) with an unstructured abstract up to 100 words.

Editorial

Editorials require an unstructured summary of one paragraph, not exceeding 50 words. Editorials should not exceed 1000 words and may contain no more than one figure or table and up to 10 essential references.

Letters to the Editor

Letters may be submitted either as responses to published articles, to inform about particular situation or raise pertinent issues, as expert opinion or as general letters to the Editor. Letters may be up to 400 words in length with a maximum of 5 references.

Insight

These articles include variety of topics which may reflect an individual perception, involvement or contribution to geriatric care. It can include good practice examples, inspirational experiences and highlight neglected areas. Essays in descriptive prose can be submitted on any topic related to geriatric care. These are usually written by a single author but a second author may be included occasionally. The length of the articles may vary considerably depending upon the topic and may be up to 2000 words excluding references. An unstructured summary of around 100 words is preferred but not mandatory. Use of subheadings is encouraged.

First person account

In first person accounts *JGCR* publishes experiences of older persons or their care providers about the care and concerns of the elderly, that can be considered significant and provide learning points for others.

Columns

These comprise a range of materials considered to be of interest to readers of the *JGCR*. This section includes reviews on book, film or web resources as short articles up to 400 words. Some other examples include News regarding developments that can influence the care of elderly, poems, paintings, photographs, quotations, information about important internet links, etc. These articles are published individually or as fillers at the end of other articles where space allows.

Preparation of Manuscripts

Prepare article in Word, A4 size page, with 1 inch margin, double spaced throughout.

Article information page

1. Type of manuscript:
2. Title of the article: Brief and relevant
3. Running title / key words / subject area
4. Name of the authors: (underline Last name)
5. Details of authors: academic degrees, professional position, institutional affiliations, professional address, email
6. Corresponding author: name, address, phone, fax, e-mail and ORCID
7. Contributions of each author:
8. Word count for abstract:
9. Word count for the text (excluding references):
10. Number of photographs/images (to be provided separately in high quality JPEG files):
11. Acknowledgement:
12. Competing interests:
13. Funding
14. Suggested Reviewers Up to 3, (not from authors' institution). Name, Position, Institution and Email

No identifiable details beyond this page.

Article Text pages

The article text pages do not contain any identifiable information, for a blind review. It should contain: Title of the article, Abstract and Key words (depending upon the article type) and the Text of the article. Please refer to article types for detail information. As a general rule, please have an Introduction and Conclusion subheadings whenever possible along with other required subheadings.

References

Authors are responsible for checking all references for accuracy and relevance in advance of submission. All references should be given in superscripted number in the order they appear in the text. Place superscript reference number after commas and full stops, unless the superscript is attached to authors name or title of book/database. At the end of the article the full list of references should follow the [ICMJE style](#). If there are more than six authors, the first six should be named, followed by 'et al'.

Example of journal articles:

The authors' names are followed by the full title of the article; the journal title abbreviated according to the PubMed; the year of publication; the volume number; (issue number in bracket); and the first and last page numbers.

1. Singh SP, Singh V, Kar N, Chan K. Efficacy of antidepressants in treating the negative symptoms of chronic schizophrenia: meta-analysis. *Br J Psychiatry*. 2010; 197(3): 174-9.

References to books should give the names of any editors, place of publication, editor, and year. Examples are shown below.

2. Murray PR, Rosenthal KS, Kobayashi GS, Pfaller MA. *Medical microbiology*. 4th ed. St. Louis: Mosby; 2002.

3. Meltzer PS, Kallioniemi A, Trent JM. Chromosome alterations in human solid tumors. In: Vogelstein B, Kinzler KW, editors. *The genetic basis of human cancer*. New York: McGraw-Hill; 2002. p. 93-113.

4. Foley KM, Gelband H, editors. *Improving palliative care for cancer* [Internet]. Washington: National Academy Press; 2001 [cited 2002 Jul 9]. Available from: <http://www.nap.edu/books/0309074029/html/>.

5. Cancer-Pain.org [Internet]. New York: Association of Cancer Online Resources, Inc.; c2000-01 [updated 2002 May 16; cited 2002 Jul 9]. Available from: <http://www.cancer-pain.org/>.

Personal communications need written authorisation (email is acceptable); they should not be included in the reference list. Unpublished doctoral theses may be cited (please state department or faculty, university and degree). No other citation of unpublished work, including unpublished conference presentations, is permissible. Further information about the references can be availed from http://www.nlm.nih.gov/bsd/uniform_requirements.html

Tables

Tables should be numbered and have an appropriate heading. The tables should be mentioned in the text such as Table 1 and the desired position in the manuscript should be indicated. Information in tables must not be duplicated in the text. The heading of the table, together with any footnotes or comments, should be self-explanatory. The table should be placed at the end of the manuscript after references, each in a separate page. Authors must obtain written permission from the original publisher if they intend to use tables from other sources, and due acknowledgement should be made in a footnote to the table.

Figures

Figures must be of high quality and provided in JPEG files separately. They should be clearly numbered and

include an explanatory legend. Legends can be provided at the end of the article after the references. All figures should be mentioned in the text (such as Fig 1) and the desired position of the figure in the manuscript should be indicated. Authors must obtain written permission from the original publisher if they intend to use figures from other sources, and due acknowledgement should be made in the legend.

For ease of formatting please use the available article template.

Abbreviations, units and footnotes

All abbreviations must be spelt out on first usage and only widely recognized abbreviations will be permitted. Abbreviations usage should be consistent throughout the article. Use abbreviations sparingly; consider using one if it is repeated more than three times.

The generic names of drugs should be used.

Generally, SI units should be used; where they are not, the SI equivalent should be included in parentheses.

Footnotes are not allowed, except table footnotes.

Statistics

Methods of statistical analysis should be described in language that is comprehensible to most readers. Raw data for the studies may be asked at any time up to 5 years after publication of research in the *JGCR* and the authors are suggested to keep these safe.

Proofs

A proof will be sent to the corresponding author of an article which should be sent back within 7 days.

Copyright

Copyright of all the published papers is retained by the authors.

Contributors form

On acceptance of the paper for publication, all authors should submit a contributor's form to the Geriatric Care and Research Organisation (GeriCaRe) regarding adherence to publication ethics.

Open access

There is no submission or publication fee at present for papers published in the *JGCR*. All papers published in the *JGCR* are freely available.



GeriCaRe

GeriCaRe (Geriatric Care and Research Organisation) is involved in the care of the elderly and research in various aspects relevant to old age with an overarching aim of improving the quality of life of older adults. It endeavours to provide evidence based information for caregivers, elderly and the health care professionals about age related issues and to support life-long-learning through educational programmes for professionals and carers.

GeriCaRe has been the recipient of the Vayoshreshtha Samman, an Indian National Award in 2016 as the 'Best Institution for Research in the Field of Ageing', conferred by the President of India.

Sharing knowledgebase and making the research evidence utilisable in the community is a key focus of GeriCaRe. It conducts and supports various research and development projects in various disciplines including health, psychology, sociology and other allied fields.

It prepares and distributes public-education materials. Journal of Geriatric Care and Research (JGCR) is one of its flagship endeavours. The JGCR is free to readers and authors and is distributed worldwide.

Donate

GeriCaRe is supported by its members, a number of experts and volunteers who contribute their time and expertise freely.

GeriCaRe requires financial support to carry on its activities. It depends upon the contribution from the individuals and organisations. You will be able to help by sponsorships.

You can sponsor any of the activities, e.g. Health Camps, Health Care Initiatives, Journal of Geriatric Care and Research, or Research and Development Projects.

If you are a business organisation, you can support GeriCaRe as one of your corporate social responsibility (CSR) activities. Considering the wide ranging issues that GeriCaRe addresses you will be able find many reasons to support.

GeriCaRe ensures that all the contributions are best utilized for the cause they are donated for.

As a token of appreciation of your donation, GeriCaRe will send you the e-copies of JGCR. If requested it will also provide the donors an annual review of health with action plans for a chosen older adult, if the clinical details are shared.

Preferably, please consider setting up a direct debit at least yearly (or more frequently if you wish) which will help GeriCaRe in planning its activities; however onetime payments are also welcome. For payment instructions or further information on donation, please contact org.gericare@gmail.com or jgcr.gericare@gmail.com.



Geriatric Care and Research Organisation (GeriCaRe)

Journal of Geriatric Care and Research
2020, Volume 7, No 3