Research Article

Health and Wellbeing of Older People in Lower and Middle-Income Countries

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Abstract |

Introduction: The physical, mental, and social aspects of the health and well-being of older people are important factors in their lives. Socioeconomic variables such as social support, household income, and education influence age-related problems in low- and middle-income countries (LMICs). Concerns about the health and well-being of the elderly become more important as these countries are faced with rapidly aging populations, especially because they are vulnerable in situations such as the COVID-19 pandemic.

Objectives: This systematic review was conducted to determine factors that affect the health and well-being of older people in LMICs.

Methods: Original research studies that primarily focused on older populations (60 or 65 years and older) in LMICs and offered insights into their health and well-being through metrics like Quality of Life (QoL) and related health indices, were considered eligible studies. Simple reviews, systematic reviews, meta-analyses, and studies conducted in languages other than English were not included. PubMed, Medline, Pak Medinet and Science Direct databases were used for literature search.

Results: Out of 1209 studies from initial search, 12 studies, mostly cohort, and cross-sectional studies, that were published after 2010 were included in our systematic review. Age and gender were the key demographic factors affecting older people's health outcomes, with older age being related to lower QoL. There were clear gender differences, with males typically enjoying greater general health and women benefiting from easier access to healthcare resources. Education emerged as a key determinant, positively impacting QoL, health resource utilization, and mental health. Household income was important since lower income was linked to less access to healthcare and lower quality of life. Older people's health and well-being were also influenced by factors such as chronic illnesses, marital status, food preferences, and lifestyle choices.

Conclusion: This systematic review highlights the complex interaction of socioeconomic, healthcare, and lifestyle factors affecting the health and well-being of older individuals in LMICs. Addressing these inequalities and challenges is crucial, as the demographic shift towards an aging population in LMICs continues. Efforts should be made to focus on promoting education, income generation, access to healthcare, healthy lifestyle choices, and social engagement among older populations to enhance their quality of life and well-being.

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Keywords | Older people, lower-middle income countries, health, well-being

Introduction

Health is a state of human being of being sound in physical, mental and social wellbeing, especially the absence of any physical disease or pain. 'Well-being' includes the subjective well-being which consists of two different dimensions: evaluative and emotional. Evaluative wellbeing is described as an Individual's satisfaction towards his quality of life in respect of their income and healthiness; emotional well-being includes mental and psychological satisfaction[1]. Additionally, social determinants such as income, education, and social support have been shown to play a significant role in shaping health outcomes among older people in LMICs[2]. Older people according to WHO includes people of age ranging around 60 or above or the people who are surpassing the life expectancy of human being.

World Bank divides the world economies into 4 groups: lower, lower-middle, upper-middle, and high-income count-

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https://doi.org/10.21649/jspark.v3i1.376

ries. Our research is to focus on lower and middle-income countries (LMICs) and the health of their older demographic. According to the World Bank, lower-income countries are those having a Gross National Income (GNI) per capita of $1,085 or lower. This includes Afghanistan, Syria, Ethiopia, Uganda and Yemen. Lower middle-income countries (LMICs) have GNI per capita of $2,085-$4,255; this includes countries like Kuwait, and Algeria Upper-middle-income countries have GNI per capita of $4,255-$13,205. includes countries like Pakistan, Kuwait, and Algeria.

It is predicted that by the year 2050, more than 20% of the entire world population will be older than 65 years, and nearly 80% of them will reside in LMIC3. Consequently, this demographic faces a dire future if the required human resource is not made available to them. These strata of population are usually dependent on their families or earning pensions that do not necessarily allow them to fulfill their needs. A very recent example of the aforementioned issue is the severity of consequences that the older populations in lower-middle income countries faced during the COVID-19 pandemic[4]. Since this group is less likely to contribute to a household's livelihood, their health needs may be compromised if the family is barely making ends meet.

We conducted a systematic review of the literature as there was a lack of significant headway being made for the mentioned demographic, which, if continues to be ignored, will become a case of 'too little too late', since the LMIC finds their population age accelerating at a faster rate than the Higher income countries[5]. Our systematic review aims to uncover the problems surrounding the provision of quality healthcare and to identify the areas of improvement that, if acted upon, will allow for more sustainable developmental plans to be put in place in LMICs.

Methods

Search Strategy

We searched electronic databases of PubMed, Medline, Pak Medinet, and Science Direct. The search string used included both keywords and MeSH terms related to our topic of study, such as "Quality of Life", "Lower and Middle-Income countries", "Elderly population" etc. Filters were used where possible such as on PubMed to select the population of interest.

Eligibility Criteria

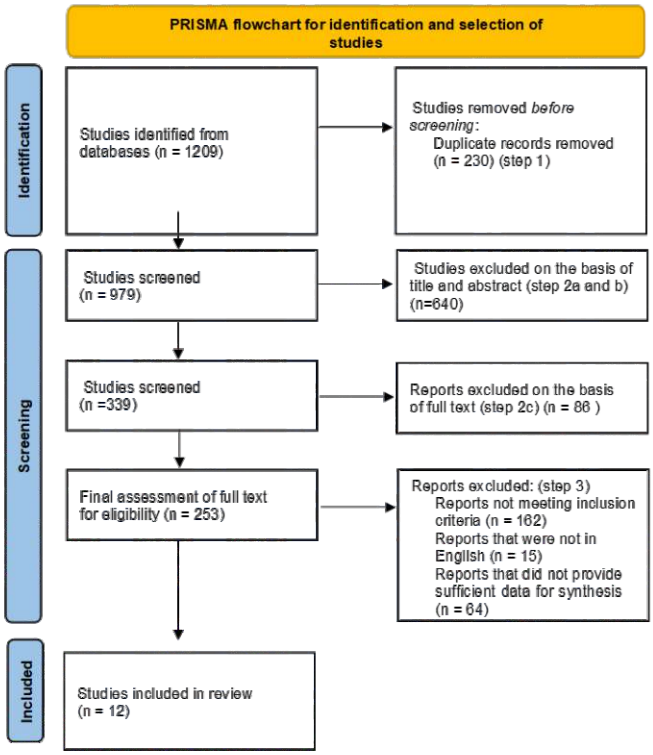
We selected original studies including cross-sectional studies, editorials, population-based studies, and literature reviews. Studies that had an elderly population (60 or 65 years and older) as the primary subject of study and were carried out in or related to the data from Lower and Middle-Income Countries and defined by the World Bank were included. We looked for data that provided information about the health and well-being of this population in a certain way, either including health indices like QoL, HALE, and DALY, or using some other measure of well-being such as questionnaires and disease prevalence data. Descriptive data about the vulnerability factors were also looked for. Studies that were in English were included.

We excluded studies in any language other than English. Systematic reviews and meta-analyses were excluded due to the possibility of redundancy of findings. Studies in countries other than the LMIC were excluded, as well as those that did not pertain to our target elderly population.

Study Selection and Data Extraction

Study selection was carried out in three steps: first duplicates were removed (step 1); screening was done by title, abstract, and full text (steps 2a, b, and c); and a review was done of the final selected studies (step 3).

Information extracted from the selected studies included: the name of author(s), year of publication, location of study, measurement of health outcomes, and possible vulnerabilities that related to the quality of life measurements. The process of data extraction was carried out by all authors individually, and differences of opinion on study selection were settled with discussion.



Results

Initial search revealed 1209 studies, which had to be screened on the basis of title and abstract. After removing duplicates,

and selecting only those studies we could avail full-text articles for, based on the inclusion criteria, twelve studies were incorporated in final review. Mostly the studies that were excluded were done based on inadequate information to allow for data synthesis or studies that tended not to focus solely on the LMICs.

The selected studies were conducted and published after 2010. There were five cohort studies concerning older people in LMICs, five cross-sectional studies, and two mixed-methods studies.

Demographic characteristics

Demographic characteristics (age and gender) had a prominent impact on the health and well-being of older people across most studies conducted in the LMICs. Unequivocally,

Table 1: *Summary of Included Studies (n=12)*

Sr No.	Author/ Year	Outcome of Interest (Health Indices)	Vulnerability Factors
1	2019 Brennan Olsen et al[6].	WHODAS 2.0 estimation, functional disability measured by Low Grip Strength (LGSt) and Low Gait Speed (LGSp); BMI	**Age** (LGSp and LGSt increased in prevalence with age, range: China: 9.7 to 49.5%; India: 29.7 to 60.3%; Ghana: 19.9 to 44.5%; Mexico: 11.1 to 60.1%; Russia 11.9% to 60.4%) **Less education acquired** (Worse functioning in all countries except South Africa) **Less household wealth** (China and India) **Alcohol Consumption** has negative association with QoL scores
2	2021 Rahman et al[7].	WHO-QoL-OLD estimation, Chronic Disease (Cardiac, GI, Respiratory, Mental)	**Age** (quality of life decreases by 0.5 units for every added year of age). **Gender** Males are associated with a greater incidence of chronic disease **Chronic disease** (Lower QoL by 2 units for patients of chronic disease over healthy). **Income** (Earners of less than 500 BDT have a lower QoL by 1.15 units than high-income individuals) **Living alone** lowers QoL by 1.25 units
3	2017 Hajian Tilaki et al[8].	QoL measured via subscales of physical functioning and role limitation, emotional role limitation, bodily pain, mental health	**Gender** (Males have better QoL than females of the same age) **Age** (Older individuals that is 70 years and above have worse QoL than 60-69 years) **Education** (High school and higher education are associated with better QoL) **Marital Status** (Being married is related to better QoL)
4	2021 Ruimin Ma et al[9].	Global aging and adult health	**Social Participation** (Low social participation is associated with multimorbidity) **Chronic condition** is associated with lower social participation hence greater multimorbidity

5	2020 Agyemang-Duah et al[10].	AOR and CI of the individual groups (males and females) and the association between the groups in terms of utilization of health facilities.	**Gender** compared to men, women were 2.694 times more likely to avail of healthcare services (AOR=2.694, CI=1.002-7.244) **Insurance** participants who did not have health insurance had a much lower likelihood of using healthcare facilities than those who did (AOR=0.096, CI=0.016-0.585) **Basic Education** Those who did receive it had a much lower likelihood to avail of healthcare 9facilities in comparison to their counterpart (AOR=0.251, CI=0.085-0.987) **Family Support** those not having it, had a much lower likelihood to avail healthcare facilities in comparison to their counterpart (AOR=0.771, CI=0.20-0.620) **Past Illness Record** those with no past illness record had a much lower likelihood to avail healthcare facilities in comparison to their counterpart (AOR=0.236, CI=0.057-0.197) **Chronic NCDs** those who had no chronic NCDs had a much lower likelihood to avail healthcare facilities in comparison to their counterpart (AOR=0.418, CI=0.101-0.723) **Extent of Disability** had an inverse relation with utilization of healthcare facilities (AOR= 19.245, CI: 2.415–29.921) **Fruits and Vegetables Consumption** those who had less than 5 fruits serving per day (AOR = 1.435 = CI: 0.552–8.740) and a low vegetables consumption (AOR = 1.202 = CI: 0.362–10.20) had a significantly greater likelihood of utilization of healthcare services
6	2012 Enid Schatz et al[11].	Wellbeing indicators included levels of worry, sadness, overall happiness, life satisfaction, and quality of life estimation	**Gender:** Gender roles and stress disparities before and after pension reception may amplify the significance of pensions in women's perceived well-being.
7	2017 Arjuna et al[12].	QOL in terms of Sociodemographic measures of health and anthropometric method	**Low Educational Status** Such people tend to be unhealthy as they don't understand and use health precautions and facilities. **Barely surviving Income:** It effects health status because of malnourishment and unable to use health facilities **Diet deficient in proteins** It effects health because of malnourishment. **Low Intellectual functioning:** It also adversely effects the health
8	2021 Muhammad et al[13].	QOL by socioeconomic and health variables	**Income Status** People with more income compared to those with low or no income have better Intellectual functioning

9	2022 Giebel et al[14].	Physical and Mental health measures with respect to their association to improvements in QoL	**Physical Exercise:** Older People who engaged themselves more in Physical Activity have healthy mental status **Socially Active:** These people tend to be more healthy and mentally active. **Psychological therapy forms:** People using such forms are healthier. **Education Status:** More educated people have a healthy mental status
10	2016 Samuel et al[15].	QOL By demographic, psychological and medical parameters.	**Low Living Status:** People living in free homes with barely surviving income status have more worries, stress, anxiety and mental impairment, and low Quality of life. **Gender:** Older females with BP issues tend to have mental impairments and low Quality of life
11	2020 Bayes Marin et al[16].	QOL by studying clusters of non-Communicable diseases (NCD's) in population	**Age** it is major risk factor disease more common in people above years **Gender and social status:** are more common in female people with low economical s because they cannot afford the medical facilities
12	2012 Brinda et al[17].	Out-of-pocket expenses and how they differ among different groups within the same demographic, and its association with QoL	**Health Status:** Disease People have high out-of-pocket expenditure **Gender:** Male Gender have great out of pocket expenses. **Mental Health:** Depression are associated with high out-of-pocket expenses. It increases the health expenditure and low QOL

among the older population, the older the population tended to be the worse the outcomes for Quality of Life were. Four studies exhibited the association between increasing age and frailty of life.

Inequalities were seen among the gender with better QoL in men.[8,15] However, two studies reported that women fared better than their male counterparts when it came to the ability to avail health resources,[10] with females having fewer chronic diseases than men, and men having the greater out-of-pocket expense in general compared to women.[17]

Attaining Education

Educational attainment showed an even stronger correlation to improved QoL among the elderly as compared to the demographic characteristics. All studies, six in total, investigating the relationship between better lifestyle and QoL in old age and education concluded that a higher level of educational attainment allowed for a better quality of life in later years.[6,8,10,12]

Those attending at least high school level of education proved more able to avail health resources timely.[8] Contrastingly, those who had little to no basic education had a reduced ability to utilize available health resources for their needs.[10] Additionally, a better education was related to better mental health and functioning in the older demographic.[14]

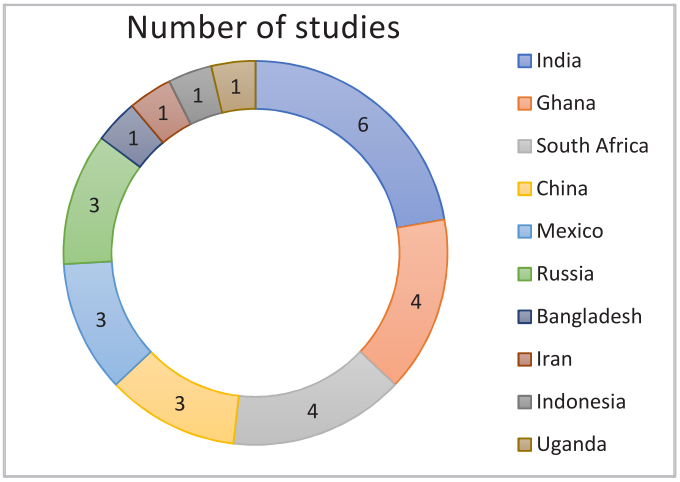


Figure 2: *Number of studies from selected LMICs*

Household Income and wealth

Generally, a lower household income is associated with poor attainment of health facilities and hence a poorer quality of life. Seven studies reported on the state of health and its association with wealth.[6,7,9,10,12,13,14]

Those elderly people who had less support of their families were less likely to attain health facilities.[10] It was also reported that better financial circumstances lead to improved intellectual functioning, likely as a result of getting prompt medical attention. On the other side of the spectrum, the elderly living in welfare homes had greater reports of stress and anxiety.[15]

Marital Status

The QoL of elderly people living on their own was reportedly poorer than those who had a companion. The same went for marital status, that is, those people who were married had better scores on Quality-of-Life assessments.[8]

Chronic diseases

Among the elderly in LMICs, a recurring theme was the coexistence of multi-morbidities and poorer lifestyles. Understandably, the QoL of life was seen to drop by 2 points on the WHO-QoL OLD scale.[7] Lesser social participation among the elderly was also associated with multi-morbidity.[9] Those people who suffered from chronic non-communicable diseases or had no past illnesses tended not to avail health facilities as much as their other counterparts.[10] Moreover, the elderly suffering from chronic illness had a greater out-of-pocket expense, which for people living in the LMICs is a major hurdle in acquiring health facilities.[17]

Other causes of poor health and wellbeing

Poor diet was one of the contributors to poorer quality of life among the elderly. Those individuals consuming less of fruits and vegetables had to utilize more health resources over their life, indicating that fruit and vegetable consumption would improve QoL and decrease the need for medical attention.[10] A protein-deficient diet had similar poor outcomes for the consumers.[12] Food consumption habits during midlife had an impact on health in old age, with poorer habits leading to decreased QoL later on in life.

Smoking and drinking had a negative impact on QoL of the elderly.[6,17] A lack of physical activity led to poor physical and mental health scores in older life.[14]

Mental Health

In the LMICs, the elderly demographic has fewer opportunities to socialize. Those elderly who had less autonomy and fewer opportunities to engage themselves socially also tended to live poorer lives.[8,14] Those individuals who had poor mental health tended to utilize fewer health resources. Providing the elderly with good, healthy, and independent living capacity saw an improvement in mental health scores.[10] Those who tended to suffer from depression or mental illnesses had greater out-of-pocket expenditure, placing an additional strain on their income.[17]

Overview of findings

As is evident from the Figure 2, the greatest adversaries of good health and well-being among older people in LMICs are lack of sufficient educational attainment and low family income. Factors like aging, gender differences, chronic physical and mental health problems play a significant role as well.

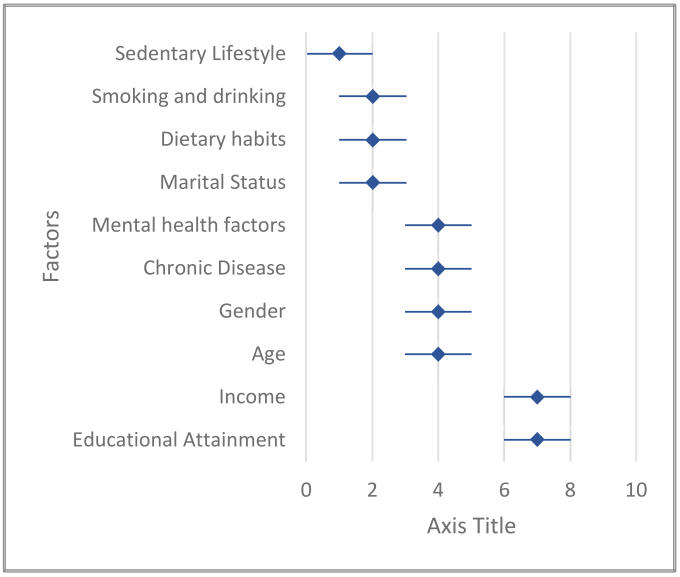


Figure 3: *Forest Plot of Number of studies reporting vulnerability factors*

Discussion

In this systemic review, we delve into exploring the complex interplay of various factors affecting the health of older people in LMICs. The available data sheds light on the various socioeconomic, healthcare factors, and lifestyle modifications that proved to influence the health and wellness of older people. A person's gender, age, lifestyle, education, income, diet, marital status, social status, and physical activity all proved to have a direct effect on his fitness and well-being. Our habits in middle age also affect our health in older age.

Studies show that with aging our immune system gets weak and we are more prone to diseases.[18] This study also highlighted how age decreases QOL as every year advances.

Females with a sedentary lifestyle, less education, and less income are unable to support themselves for their daily needs and avail health facilities and are proven to develop chronic diseases or have more health issues in older age.[19] Our study also showed similar results.

Education is directly associated with health. Educated people are more aware of health facilities and preventive measures to be adopted, thus, having good health. Educated people also avail good jobs and a good income to support themselves and their family needs and thus experience good health. This is comparable to the results our study deduced.[20] The use of telemedicine services is also a source of awareness about health facilities, and to educate people on how they can prevent diseases and have a healthy life.[21]

Studies show that daily exercise or any kind of physical activity boosts our immunity, strengthens our muscles, and bones, improves our brain health, and reduces the risks of getting diseases. Our study also highlighted that people with more physical activity experience good health.[22]

By focusing on these factors influencing QALY and DALY of elderly people our study seeks to contribute to the development of targeted interventions, policies, and strategies that can improve the lives of elderly in such resource-constrained settings.

A major limitation of the literature was the lack of consistency in measuring the mental and physical health scores, which made it difficult to develop a parameter for comparison among the elderly populations of different LMICs. Additionally, it also hindered us from any form of pooled data analysis, as the widely different scales used created too great of a heterogeneity.

Daily dietary habits also have a profound impact on health as they enable us to live longer by strengthening our normal body functioning and thus improve health and well-being. Our study also deduced that with a balanced diet, older people can experience good health.[23]

Having a sound income to support our daily needs and health facilities also positively impacts our health. In our study, we find out that people with less education and barely survivable income are unable to meet their daily health needs, hence more prone to develop chronic illness and possibly die of it.

It is observed that people who live alone tend to have more health issues. Lacking encouragement and support from family and friends makes a person more prone to getting into unhealthy habits that will deteriorate their health. Contrary to these, people living with their spouse or family tend to have better health in their older age. Similar results are shown in this study.[24]

People who engage themselves in mental exercises, brain games and indulge themselves in social gatherings are seen to have a healthy mind and body.

Our midlife habits and behaviors also have a profound impact on health. Smoking, drinking, having a sedentary lifestyle and unhealthy dietary habits drastically affect health in older age.

Other positive contributory factors include having children, religion, human behaviors, and mobility.[25]

Conclusion

This systematic review highlights the complex interaction of socioeconomic, healthcare, and lifestyle factors affecting the health and well-being of older individuals in LMICs. Addressing these inequalities and challenges is crucial, as the demographic shift towards an aging population in LMICs continues. Efforts should be made that focus on promoting education, income generation, access to healthcare, healthy lifestyle choices, and social engagement among older populations to enhance their quality of life and well-being.

Authors Contribution

MHK, MA: concept, MHK, MA, MK, MN, MH, MHA: literature review, literature search and data extraction, MHK, **MA, MH:** manuscript

Conflict of Interest: *None*

Funding Source: *None*

References:

1. Kieny C, Flores G, Ingenhaag M, Maurer J. Healthy, wealthy, wise, and happy? Assessing age differences in evaluative and emotional well-being among mature adults from five low-and middle-income countries. Social Indicators Research. 2020:1-32.
2. Kowal P, Chatterji S, Naidoo N, Biritwum R, Fan W, Lopez Ridaura R, et al. Data resource profile: the World Health Organization Study on global AGEing and adult health (SAGE). Int J Epidemiol. 2012;41(6):1639–49.
3. Dogra S, Dunstan DW, Sugiyama T, Stathi A, Gardiner PA, Owen N. Active Aging and Public Health: Evidence, Implications, and Opportunities. Annu Rev Public Health. 2022; 43(1):439–59.
4. Lloyd-Sherlock P, Ebrahim S, Geffen L, McKee M. Bearing the brunt of covid-19: older people in low and middle income countries. BMJ. 2020;368(1):m1052.
5. Sudharsanan N, Bloom DE, Sudharsanan N. The demography of aging in low-and middle income countries: chronological versus functional perspectives. InFuture directions for the demography of aging: Proceedings of a workshop 2018 (pp. 309-338).
6. Brennan-Olsen SL, Bowe SJ, Kowal P, Naidoo N, Quashie NT, Eick G, et al. Functional Measures of Sarcopenia: Prevalence, and Associations with Functional Disability in 10,892 Adults Aged 65 Years and Over from Six Lower- and Middle-Income Countries. Calcif Tissue Int. 2019;105(6):609–18.
7. Rahman FN, Khan HT, Hossain MJ, Iwuagwu AO. Health and wellbeing of indigenous older adults living in the tea

gardens of Bangladesh. Plos One. 2021;16(3):e0247957.

8. Hajian-Tilaki K, Heidari B, Hajian-Tilaki A. Health Related Quality of Life and Its Socio-Demographic Determinants among Iranian Elderly People: a Population Based Cross-Sectional Study. J Caring Sci. 2017;6(1):39–47.
9. Ma R, Romano E, Vancampfort D, Firth J, Stubbs B, Koyanagi A. Physical Multimorbidity and Social Participation in Adult Aged 65 Years and Older From Six Low- and Middle-Income Countries. J Gerontol Ser B. 2021;76(7):1452–62.
10. Agyemang-Duah W, Peprah C, Arthur-Holmes F. Predictors of healthcare utilisation among poor older people under the livelihood empowerment against poverty programme in the Atwima Nwabiagya District of Ghana. BMC Geriatr. 2020; 20(1):79.
11. Schatz E, Gómez-Olivé X, Ralston M, Menken J, Tollman S. The impact of pensions on health and wellbeing in rural South Africa: Does gender matter? Soc Sci Med 1982. 2012; 75(10):1864–73.
12. Arjuna T, Soenen S, Hasnawati RA, Lange K, Chapman I, Luscombe-Marsh ND. A Cross-Sectional Study of Nutrient Intake and Health Status among Older Adults in Yogyakarta Indonesia. Nutrients. 2017;9(11):1240.
13. Muhammad T, Srivastava S, Sekher TV. Association of self-perceived income sufficiency with cognitive impairment among older adults: a population-based study in India. BMC Psychiatry. 2021;21(1):256.
14. Giebel C, Ivan B, Burger P, Ddumba I. Impact of COVID-19 public health restrictions on older people in Uganda: "hunger is really one of those problems brought by this COVID". International psychogeriatrics. 2022;34(9):805-12.
15. Geraets AFJ, Heinz A. The associations of dietary habits with health, well-being, and behavior in adolescents: A cluster analysis. Child Care Health Dev. 2023;49(3):497–507.
16. Samuel R, McLachlan CS, Mahadevan U, Isaac V. Cognitive impairment and reduced quality of life among old-age groups in Southern Urban India: home-based community residents, free and paid old-age home residents. QJM Mon J Assoc Physicians. 2016;109(10):653–9.
17. Bayes-Marin I, Sanchez-Niubo A, Egea-Cortés L, Nguyen H, Prina M, Fernández D, et al. Multimorbidity patterns in low-middle and high income regions: a multiregion latent class analysis using ATHLOS harmonised cohorts. BMJ Open. 2020;10(7):e034441.
18. Brinda EM, Rajkumar AP, Enemark U, Prince M, Jacob KS. Nature and determinants of out-of-pocket health expenditure among older people in a rural Indian community. International Psychogeriatrics. 2012;24(10):1664-73.
19. Marzetti E, Lawler JM, Hiona A, Manini T, Seo AY, Leeuwenburgh C. Modulation of age-induced apoptotic signaling and cellular remodeling by exercise and calorie restriction in skeletal muscle. Free Radic Biol Med. 2008;44(2):160–8.
20. Saleem FJ, Jamil F, Khalid R. Gender Differences in Nutritional Quality of Life of Young and Old Adults. Ann King Edw Med Univ. 2018;24(S):872–8.
21. Raghupathi V, Raghupathi W. The influence of education on health: an empirical assessment of OECD countries for the period 1995–2015. Arch Public Health. 2020;78(1):20.
22. Afzal S. Telemedicine: Underutilized Tool of Global Health. Annals of King Edward Medical University. 2016;22(1):1-1
23. Qiu Y, Fernández-García B, Lehmann HI, Li G, Kroemer G, López-Otín C, Xiao J. Exercise sustains the hallmarks of health: Running title: Exercise sustains health. Journal of Sport and Health Science. 2022.
24. Portacolone E, Rubinstein RL, Covinsky KE, Halpern J, Johnson JK. The Precarity of Older Adults Living Alone With Cognitive Impairment. The Gerontologist. 2019; 59(2): 271–80.
25. Khawaja AO, Shahed S. Positive Aging: The Experience of Happiness among Pakistani Older Adults. Annals of King Edward Medical University. 2019;25(2):1-7
26. Afzal S. Community Driven Development in context of Health Promotion. Annals of King Edward Medical University. 2019;25(S):199-200
27. Haider W. Why Health for All by 2000 Policy (HFA 2000) failed to achieve its goals? Annals of King Edward Medical University. 2019;25(3):1-6.