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Physical and Mental Health Problems of Elderly People at Nagarjun Municipality in Kathmandu

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Abstract

Aging is a gradual, continuous process of natural change that begins in early adulthood. The objective of the study is to analyse the physical and mental health problems of elderly people in Nagarjun Municipality, Kathmandu. Ward number 6 is selected randomly among the 10 wards which has 680 elderly people aged 60+. Yamene formula ($n=N/1+Ne^2$) was used to determine the sample size (n=250) and applied systematic random sampling method to select the samples. Data entry and analysis was done using SPSS version 21.0. The most prevalent chronic illness in this study was joint pain (67.20%), followed by Gastrointestinal (51.10%) and Hypertension or BP (39.60%). By using logistic regression analysis it shows that the variable of ownership of land certificate has the strongest net association with [OR=2.06(1.18-3.59)] and other variable involvement in the social and religious organization has the second strongest association with [OR=1.77(0.99-3.17)]. Study shows that elderly who do not have ownership of the land certificate have more than two times mental health problems than who have land certificate. Various health schemes, policies and programs can be designed in the research area and similar setting based on the study findings.

Keywords: elderly people, physical and mental health problems

Introduction

Aging is a global issue of importance in the 21st century. The world is witnessing a rapid demographic shift towards an aging population. People are living longer due to advances in education, technology, medicine, food distribution, and sanitary conditions. In Nepal, the trends show that percentage of elderly population will increase significantly in coming days. To live happy, healthy and quality life is the desire of every elderly people in the world. The objective of this research is to analyse

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the physical and mental health problems of elderly people at Nagarjun Municipality in Kathmandu, Nepal.

A child born in Nepal in 2011 has a predicted life expectancy of 66.6 years, which is almost 17 years longer than in 1981(CBS,2014). Census data shows an increase in the proportion of older people from 5 percent in 1952/54, to 6.5 percent in 2001 and 8.1 percent in 2011, with a 2016 survey estimate of 9.9 percent (MoHP, 2017).

In absolute terms, the elderly population increased from 857,061 in 1981 to 2,154,410 by 2011(CBS, 2012). In 2030, the aged population is projected to be 3,336,000, accounting for more than 10% of the total population (CBS, 2014).

Aging is a normal complex physiological and irreversible process (Shanker et al., 2007). It is the product of certain structural and functional changes taking place in different parts of the body as the life progresses (Shanker et al., 2007). So there is a progressive decrease in the normal functioning of the body resulting in an increased burden of diseases affecting different systems (Dasgupta, 2013). The number of people surviving into old age is greater than ever, and it is a trend affecting both developing and developed countries (Abdulraheem et al., 2011). Elderly aged 65 and above constituted from 6.0 to 15.5 percent of the populations in Asia, Europe, and North America by the year 2000. These data are expected to rise to approximately 12 to 24.3 percent by 2030 (Woo et al., 2007).

Over 20% of adults aged 60 and over suffer from a mental or neurological disorder (excluding headache disorders) and 6.6 percent of all disability (disability adjusted life years-DALYs) among people over 60 years is attributed to mental and neurological disorders. These disorders in older people account for 17.4 percent of Years Lived with Disability (YLDs). The most common mental and neurological disorders in this age group are dementia and depression, which affect approximately 5 percent and 7 percent of the world's older population, respectively. Anxiety disorders affect 3.8 percent of the older population, substance use problems affect almost 1% and around a quarter of deaths from self-harm are among people aged 60 or above. Substance abuse problems among older people are often overlooked or misdiagnosed (WHO, 2017).

Global population ageing, due to fertility decline and rising life expectancy, has extensive consequences (Harper, 2014). In 2017, an estimated 962 million people were aged 60 or over comprising 13 percent of the global population which is predicted

to rise to 1.4 billion (16.5%) by 2030 and 2.1 billion (20%) by 2050 (UN, 2017). Population ageing is producing changes to demographics in developing countries with Nepal recently experiencing a sharp rise in the relative and absolute size of its elderly population (UNFPA, 2012).

Mental disorders in the elderly are a serious public health concern with the aged population having a higher prevalence of mental disorders (Fei, 2009). The 2010 Global Burden of Disease Study identified that mental and substance use disorders accounted for 22.9 percent of all Years Lived with Disability (YLDs) and 7.4 percent of all Disability Adjusted Life Years (DALYs) (Whiteford et al., 2013). According to the WHO, 15 percent of older people (≥60 years) live with a mental disorder accounting for 6.6 percent of the total DALYs amongst older adults (WHO, 2016).

Identified mental disorders amongst the elderly include depression, anxiety, dementia, cognitive impairment, post-traumatic stress, and substance use (Mojtabai & Olfson, 2004). Mental disorders often develop with co-morbidities and are associated with negative health outcomes. Mental health problems amongst the elderly are often undiagnosed and untreated in part due to stigma and discrimination (Hall et al., 2016).

Approximately 20 percent of older adults have a mental illness today, yet only half of older adults who acknowledge such problems receive treatment and only a fraction of those receive specialized mental health services (Dupree et.al., 2005; U.S. Department of Health and Human Services, 1999). Mental disorders among older adults may substantially impair physical functioning and result in unnecessary hospitalization or nursing home placement and increased rates of mortality. At the same time, individuals with physical health problems are more vulnerable to mental illness (Speer & Schneider, 2003; U.S. Department of Health and Human Services, 1999). Common psychiatric problems which prevail among elders are depression, Anxiety, dementia and suicide. Depression is the most common mental health problem of later life, affecting 10–20 per cent of older people (NIMHE, 2005) and up to 40 percent of care home residents, yet in older people depression is often underdiagnosed and under-treated.

Different researches have conducted on physical and mental health problems of older people on different times as perceptions of psychosocial and mental health problems of older people in post-earthquake situation in Nepal (Adhikari et al., 2018), prevalence of depressive symptoms and explore possible contributory risk factors in older adults living in Nepal (Simkhada et al., 2017), prevalence of mental health

disorders amongst the elderly in Nepal (Thapa et al., 2018), impact of out migration of children on the elderly parents staying there (Khanal et al., 2018), depression and its associated factors among elderly in old-age homes and a community of Kathmandu district (Mali et al., 2021), to deepen the understanding of depressed elderly persons' lived experiences of physical health problems (Holm et al., 2014), on the mental health service needs of, and use by, independently living rural older adults, with a focus on depression (Bocker et al., 2012), prevalence of common physical health problems and to assess the effect of aging influencing them among the geriatric population in Malaysia (Kulothungan et al., 2018) and prevalence of physical and mental health problems in a rural community in Sepang, Selangor (Sidik et al., 2004). Similarly, research conducted on mental health of geriatric population in India (Girdhar et al., 2019), psychological distress among the elderly population in Northern India (Joshi et al., 2004), morbidity and mortality patterns of elderly persons in the study area in South India (Mangal et al., 2019), depression and physical problems associated with elder abuse in an urban North Indian community (Mawar et al., 2018), impact of physical and mental health and self-reported chronic morbidities on stress among of geriatric population in Kerala (Jose et al., 2021), on mental health and associated morbidities among inhabitants of old age homes (Tiwari et al., 2012), on depression and anxiety among the rural and urban Indian (Maity, 2015) and mental health problems among the Indian older adults (Udhayakumar & Ilango, 2013). The objective of the study is to analyze the physical and mental health problems of elderly people at Nagarjun Municipality in Kathmandu.

Method

Data Source

This cross-sectional study was conducted from 12th January to 15th March 2020 in Nagarjun Municipality, Kathmandu. Nagarjun Municipality covers an area of 29.8 sq km, northern latitude 270 40 'to 270 44', east longitude 850 12 'to 850 17', average height: 1300 to 2500 m above sea level. Nagarjun Municipality has a total population of 67,420 and elderly population 60+ is 5800 according to 2011 census. Out of which 34064 (50.25%) are males and 33356 (49.75%) are females. As there is a trend of gradual migration from other parts of the kingdom, people of different castes and religions live here. The majority of the people in this municipality follow Hindu and Buddhist religions. The major castes are Newar, Brahmini, Magar, Sanyasi and Chhetri.

In this study, health problems among the elderly were divided into physical and mental health problems. Chronic illness was selected to represent physical health problems. Different terms like variation of mind and feeling, becoming single minded, low self-esteem, crying without any reason, feeling body heavy, not like to usual properly work and not like to live any more were selected to represent mental health problems. The variables in the physical health problems like as Joint pain, Gastrointestinal, Hypertension/BP, Diabetes, Respiratory diseases (Asthma), Heart disease, Eye problem, Kidney disease and Uric acid selected to represent chronic illnesses. Primary data were collected from field survey and secondary data used from different published and reliable sources.

Sampling

Before restructuring the local level, Ramkot was a separate and independent VDC which had nine wards then. After restructuring the local level, it became the part of Nagarjun Municipality belongs to ward number 6. There were 680 elderly people aged 60+. Sample size (n=252) is determined by using Yamene equation, $n=N/1+Ne^{2.}$ Where, n= Sample size, N=Population size, e=margin of error. The margin of error is 5 percent. Systematic random sampling technique was applied for sample selection. The sampling interval was 3 (N/n=680/252=2.69≈3). First of all one number selected randomly and followed systematic sampling technique to select other numbers. A structured interview schedule was developed to conduct household survey and collected information.

Data Analysis and Interpretation

Field questionnaires collected and checked carefully. Then data were carefully edited, analyzed and processed by using computer. Simple statistical tools such as frequency distribution, average and percentage have used analyzing and interpreting data. Software like Excel, Microsoft Word and SPSS version 21.0 used to analyse the data.

Variable Identified

Different dependent and independent variables have used to show the cause and effect relationship in this study. Dependent and independent variables are identified as follows:

Background Variables

Back ground variables are age, sex, caste/ethnicity, occupation and literacy.

Independent Variables

Independent variables are marital status, living arrangement, ownership of house, pension, ownership of land and involvement in the social and religious organization.

Dependent Variable

The dependent variables are physical and mental health problems of elderly people.

Statistical Analysis

In this study logistic regression analysis is used as the multivariate analysis tool. As all the dependent variables were measured in binary scale (yes or no) and most of the independent variables are categorical variables, logistic regression analysis is the best method to analyze the data. Moreover, logistic regression does not assume linearity of the relationship between each independent and dependent variables and it does not required normally distributed variables. It has a logit link function which is the logit transformation of θ, i.e. probability of an event. Logistic regression computes the log odds for a particular outcome and the odds of an outcome are given by the ratio of probability of it happening and not happening as θ/1- θ.

In this model independent variables are occupation, ownership of land, ownership of house, and involvement in the social and religious organization. Similarly, the dependent variables are physical and mental health problems of elderly people.

Logistic regression equation is:

$$\text{logit}[\theta(x)] = \log [\theta(x)/1-\theta(x))] = \alpha + \beta_1 x_1 + \beta_2 x_2 + \ldots\ldots + \beta_n x_n$$

Where logit[θ(x)] = logit of dependent variable;

α = constant of the equation; and

β = coefficient of the predictor (independent) variables

x_1, x_2 and x_n = predictor (independent) variables

The logistic regression analysis results are presented in terms of the odds ratios (ORs) which are much easier parameter to interpret the results. Odds ratios are calculated with respect to the reference category. For example: If OR for one category is 2, it indicates that chances of happening that particular event in the category are two times higher compared to the reference category.

Results

Background characteristics of respondents

There were more female (50.79%) than male (49.21%) in the study area. Most of the elderly (63.89%) were depend on agriculture, (53.57 %) were illiterate, (63.89%) were currently married, (62.30%) have land and (69.44%) lived with son and daughter-in-laws, (60.32%) have ownership of land, and (20.63%) elderly get pension. Similarly, majority of the elderly (62.69%) had joint pain, (47.61%) had gastrointestinal problem and (36.90%) had hypertension/BP.

Table 1: Distribution of respondents by background charactristics

Background characteristics	**%**	N
Age Group		
60-64	24.60	62
65-69	25.79	65
70-74	26.19	66
75+	23.41	59
Sex		
Male	49.21	124
Female	50.79	128
Caste and ethnicity		
Brahmin	36.90	93
Sanyasi	23.81	60
Chhetri	17.46	44
Newar	11.90	30
Janajati	6.35	16
Schedule Caste	3.57	9
Literacy status		
Literate	46.43	117
Illiterate	53.57	135
Occupation		
Agriculture	63.89	161
Government Job	27.78	70
Semi-Government Job	4.37	11
Private Job	3.97	10
Marital Status		
Married	63.89	161
Others	36.11	91
Ownership of Land		
Have land	62.30	157
No land	37.70	95
Living Arrangement		
Self	13.10	33

Background characteristics	%	N
Husband/Wife	10.17	27
Son/Daughter-in-law	69.44	175
Daughter/Son-in-law	1.98	5
Others	4.76	12
Ownership of House		
Own	60.32	152
Hire	14.68	37
Free of cost	18.65	47
Others	6.35	16
Involvement in the Social and Religious Organization		
Involve	31.35	79
Does not involve	68.65	173
Pension		
Getting Pension	20.63	52
No Pension	79.37	200
Chronic illness		
Joint pain	62.69	158
Gastrointestinal	47.61	120
Hypertension/BP	36.90	93
Respiration	20.63	52
Eye	19.44	49
Toothache	13.88	35
Heart disease	10.31	26
Diabetes	3.57	9
Kidney	2.77	7
Uric acid	0.79	2

Source: Field Survey, 2020

Bivariate Analysis

During the time of field survey when researcher found following terms to the elderly then it supposed to be mental health problems otherwise not. Relating to the mental health problems different terms like variation of mind and feeling, sleeplessness, becoming single minded, low self- esteem, crying without any reason, feeling body heavy , not like to usual work properly, and not like to live any more are used in this study. Following table describes the association of the mental health problems of the elderly and background characteristics.

Table 2: Percentage Distribution of Elderly People having on Mental Health Problems by Different Background Characteristics, 2020

Background Characteristics	Mental Health Problem	
	%	N
Occupation*		
Agriculture	45.07	142
Others	60.91	110
Ownership of Land Certificate*		
Yes	45.22	157
No	63.16	95
Ownership of the House**		
Own	59.87	152
Hire	37.84	37
Live free of cost	42.55	47
Others	37.50	16
Involvement in the Social and Religious Organization*		
Yes	39.24	79
No	57.80	173
Total		252

*refers $p<0.01$ and ** refers $p<0.05$ in cross tabulation analysis

Source: Field Survey, 2020

Table 2 revels that there is association between mental health problems of elderly people and different background characteristics. Elderly people whose profession is agriculture, 45.07 percent have mental health problem, and those elderly whose profession is non- agriculture 60.91 percent have mental problems which is significant at $p<0.01$. There are 63.16 percent elderly have mental health problems who do not have landownership certificate, and 45.22 percent elderly have mental health problem who have landownership certificate which is significant at $p<0.01$. There are 59.87 percent elderly experienced mental health problems having a home and 37.84 percent have mental health problem who live on rent which is significant at $p<0.05$. Those elderly who have involved in different social and religious organizations have found lower mental health problem than others. From table 1 shows that 39.24 percent elderly experienced mental health problems who have involved in different social and

religious organization and 57.80 percent have experienced mental health problems who do not involve in any organization which is significant at $p<0.01$.

Multivariate Analysis

In this model different independent variables like occupation, ownership of the land, ownership of the household and involved in religious organization selected for regression analysis. Table 2 represents the estimation of logistic regression and it shows the net effect on mental health problems of the elderly people on different independent variables.

Table 3. Logistic Regression on Mental Health Problems of Elderly People, 2020

Explanatory variable	Odds ratio	95% CI	
		Lower	Upper
Occupation			
Agriculture	1		
Others	1.55	.87	2.78
Ownership of the Land Certificate			
Yes	1		
No	2.06**	1.18	3.59
Ownership of the Household			
Own	2.48	.78	7.85
Hire	1.33	.37	4.80
Free of cost	1.60	.47	5.39
Others	1		
Involvement in the Social and Religious Organizations			
Yes	1		
No	1.77**	.99	3.17

* = Significant at 0.01, ** = Significant at 0.05, and *** = Significant at 0.10

Source: Field Survey, 2020

The table 3 shows that there are only two independent variables like ownership of the land certificate and involvement in the social and religious organization are statistically significant in logistic regression analysis at 5 percent significant level. The ownership of land certificate has the strongest net association with

[OR=2.06(1.18-3.59)]. The variable which is involvement in the social and religious organization has the second strongest net association with [OR=1.77(0.99-3.17)]. The elderly who did not have ownership of land certificate reported that they have more than two times mental health problems than elderly who have. Similarly, respondents who did not involve in different social and religious organizations have about two times more mental health problems than who have involved.

Discussion

In this research, bivariate analysis reveals that 60.91 percent elderly have mental health problems whose occupation is non-agriculture. About half of the respondents (50%) reported that at least one mental health problem (Joshi & Chalise, 2018). Watts's et al*.,* (2002) reported psychiatric morbidity of 48 per cent among older persons by GHQ-12 method. Similar results (53%) were also obtained by Berardi et al., (2005).

This research shows that a high proportion of elderly people (69.44%) live with their sons and daughter-in-laws. This finding corresponded to another study in Malaysia which found that 90% of the elderly respondents in rural communities lived with their families (Shahar et al., 2001). Study shows that nearly half of the elderly respondents (46.43%) had illiterate. In spite of their low educational level, 20.63% of respondents get pension. This result is consistent with the study among Malaysian elderly in rural communities by (Shahar, 2001). In her study, Shahar explained that the low percentage of educated elderly was due to the lack of educational opportunities, particularly in rural areas before Independence in 1957 (Shahar et al., 2001).

Diseases of the respiratory system were found in 10.20 percent of the aged persons (Kishor & Garg, 2007) and observed 20.63 percent in Nagarjun Municipality, Kathmandu. A high prevalence of respiratory diseases in Nagarjun Municipality may be due to the fact that comparatively higher level of air pollution. In Nagarjun Hypertension was 36.90 percent and 41.6 percent in Chandigarh (Bhatia et al., 2007). This is in agreement with a study conducted in Chandigarh by Kumar (2000) which found the prevalence of hypertension to be 44.9 percent; however, Parvan (1983) reported a 19.7 percent prevalence of hypertension in Shimla. Heart disease was found in 10.31 percent in this study and it was almost same figure 9.6 percent found in Chandigarh (Bhatia et al., 2007).

The most prevalent chronic illness in this study was joint pain (67.20%), followed by Gastrointestinal (51.10%), Hypertension or BP (39.60%), Eye (20.90%),

Toothache (14.90%), Heart disease (11.10%), Diabetes (3.80%), Kidney (3%) and Uric acid (2.10%). This finding is almost consistent with Shahar, the major chronic illness reported among the elderly were joint pains (45.0%), followed by respiratory problems (15.1%). Another study among the elderly in Hong Kong found that the most common chronic illness were rheumatism (34.2%) and hypertension (32.2%) (Leung & Lo, 1997).

Conclusion

Physical and mental health problems of the elderly have become the burning subject in the world. In multivariate analysis found two variables are significant. Those elderly who did not have land certificate had more than double mental health problems than who have. Elderly who did not involve in the different social and religious organizations had double mental health problems than who involved. To improve the physical and mental health of the elderly in the study area or similar settings various health schemes, policies and programs can be designed based on the study findings.

References

Abdulraheem, I. S., Oladipo, A. R., & Amodu, M. O. (2011). Prevalence and correlates of physical fisability and functional limitation among elderly rural population in Nigeria. *Journal of Aging Research*. https://doi.org/10.4061/2011/369894

Adhikari, R. P., Upadhaya, N., Paudel, S., Pokhrel, R., Bhandari, N., Cole, L., & Koirala, S. (2018). Psychosocial and mental health problems of older people in post earthquake Nepal. *Political Studies, 30*(6), 560-576. https://doi.org/10.1177%2F08 982 6431770205

Berradi, D., Menchetti, M., & De Ronchi, D. (2002). Late life depression in prim care: A nationwide Italian epidemiological survey. *Journal of the American Geriatric Society, 50*(1), 77-83.

Bhatia, S., Swami, H. M., Thakur, J. S., & Bhatia, V. (2007). A study of health problems and loneliness among the elderly in Chandigarh. *Indian Journal of Community Medicine, 32* (4), 255-258.

Bocker, E., Glasser, M., Nielsen, K., & Weidenbacher-Hoper, V. (2012). Rural older adults' mental health: Status and challenges in care delivery. https://doi.org/10.22605/RRH2199

Central Bureau of Statistics (CBS). (2012). *National population and housing census 2011*. National Planning Commission, Kathmandu, Nepal.

Central Bureau of Statistics (CBS). (2014). *National population and housing census 2011* .National Planning Commission, Kathmandu, Nepal.

Dasgupta, A., Ray, D., Roy, S., Sarkar, T., Ghosa, A., & Das, A. (2013). Depression among the geriatric population is a matter of concern: A Community Based Study in a Rural Area of West Bengal. *3*(4), 282–287.

Dupree, L. W., Watson, M. A., & Schneider, M. G. (2005). Preference for mental health care: A comparison of older African Americans and older Caucasians. *Journal of Applied Gerontology, 24*(3), 196-210.

Fei, M., Chang-Qu, Y., Wang, T., Yin, J., Xu Bin, J., & Han Ding, Q. (2009*)*. Prevalence and distribution of cognitive impairment no dementia (CIND) among the aged population and the analysis of socio-demographic characteristics*, 23* (2), 130-138.

Girdhar, R., Sethi, S., Vaid, R. P., & Khurana, H. (2019). Geriatric mental health problems and services in India: A burning issue. *Journal of Geriatric Care and Research, 6*(1).

Hall, S. E., Watson, T. S., Kellums, M.L., & Kimmel J. (2016*)*. Mental health needs and resources in Nepal. *International Journal of Culture and Mental Health, 9*(3), 278-284.

Harper, S. (2014). Economic and social implications of aging societies. *Science*, 346(6209), 587-591.https:// doi.org/ 10.1126/science.1254405

Holm, A. L., Lyberg, A., & Severinsson, E. (2014). Living with stigma: Depressed elderly persons' experiences of physical health problems. *Nursing Research and Practice*. https://doi.org/10.1155/2014/527920

Jose, R., Narendran, M., Leelavathy, M., Sukumaran, A. B., Prakash, S., & Benny, P. V. (2021). Chronic morbidity, self-perceived health, and its impact on stress among elderly persons, Kerala. *International Journal of Medical Science and Public Health*, *10*(1).

Joshi, K., Kumar, R., & Avasthi, A. (2003). Morbidity profile and its relationship with disability and psychological distress among elderly people in Northern India. *International Journal of Epidemiology*, *32* (6), 978-987.

Joshi, M., & Chalise, H. N. (2018). Quality of life of Nepalese elderly living in rural Nepal. *Journal of Gerontology & Geriatric Research*, *7*. doi: 10.4172/2167-7182.1000484

Khana, P., Ra, S., & Chalese, H. N. (2018). Children's migration and its effect on elderly people: A study at old age homes in Kathmandu. *American Journal of Gerontology and Geriatrics*, *1*(1).

Kishore, S., & Garg, B. S. (2007). Socio-medical problems of aged population in a rural area of Wardha. *Indian Journal of Public Health*, *8*.

Kr, S. (2012). A study on quality of life of elderly population in Mettupalayam. *National Journal of Research in Community Medicine, Tamilnadu, 1(*3), 123-177.

Kulothungan, K., Tamilarasan, M., Rock Bhutto, D., Sri Ranganathan, T., & Sri Ananda, V. (2018). Physical health problems among the geriatric population in Perambalur Municipality, Tamil Nadu. *International Journal of Community Medicine and Public Health, 5* (12).

Kumar, R., Kumari, S., & Sharma, B. K. (2002). Time trends in prevalence of risk factors of cardiovascular diseases in Chandigarh. *Journal of the Indian Medical Association, 100*(9), 547-552.

Leung, E., & Lo, M. (1997). Social and health status of elderly people in Hong Kong. *The Health of the Elderly in Hong Kong.* Hong Kong University Press.

Maiti, M., & Mukhophadaya, B. (2015). Is mental health a burning health issue for Indian elderly? *Journal of Psychological and Clinical Psychiatry,3(3*). https://doi: 10.15406/jpcpy.2015.03.00132

Mali, P., Poudyal, E. N., Mali, S., Poudel, L., & Joshi, SP. (2021). Depression and its associated factors among elderly people of old age homes and community of Kathmandu district, Nepal. International Journal of Community Medicine and Public Health *8*(4). https:/doi.org/10.18203/2394-6040.ijcmph20211205

Mangal, N., Kumar, D., Varghese1, K. A. , Chauhan, M., & Samanta, M. (2019). Geriatric health related problems in an urban area of southern Rajasthan. *International Journal of Community Medicine and Public Health*, *6*(10).

Mao, L., Mondal, K., & Manna, M. (2019). A comparative study on quality of life of older adults in India. *Indian Journal of Nursing Education*, *20* (1), 73-77.

Ministry of Health and Population (MoHP), New ERA, ICF. (2017). *Nepal demographic and health survey*. Kathmandu, Nepal. https://www.dhsprogram.com/pubs/pdf/FR336/FR336.pdf

Mojtabai, R., Olfson, M. (2004). Major depression in community-dwelling middle-aged and older adults*:* prevalence and 2- and 4-year follow-up symptoms. *Psychological Medicine, 34* (4), 623-634.

Mowar, S., Koul, P., Das, M., & Gupta, S. (2018). Association of physical problems and depression with elder abuse in an urban community of North India. *Indian Journal of Community Medicine*, *43* (3), 165-169.

National Institute of Mental Health (NIMH). (2005). Facts for champions, London. Department of Health, *11*.

Parvan, U. C. (1983). A study of medical and psychosocial problems of the aged in hilly areas. HP University: MD Thesis. IGMC Shimla.

Shahar, S., Earland, J., & Rahman, S. A. (2001). Social and health profiles of rural elderly Malays. *Singapore Medical Journal, 42*(5), 208-213.

Shankar, R. Tondon, J., Gambhir I. S., & Tripathi, C. B. (2007). Health status of elderly population in rural area of Varanasi district. *India Journal Public Health*, *51*, 92-94.

Sidik, S. M., Rampal, L., & Afifi, M. (2004). Physical and mental health problems of the elderly in a rural community of Sepang, Selangor. *Malaysian Journal of Medical Sciences*, *11*(1), 52-59.

Simkhada, R., Wasti, S. P., Gharti Chhetri, V., & Lee, A. (2017). Prevalence of depressive of depressive symptoms and its associated factors in older adults: A cross-sectional study in Kathmandu, Nepal. *Aging and Mental Health, 22*(6), 802-807.

Speer, D. C., & Schneider, M. G. (2003). Mental health needs of older adults and primary care: Opportunity for interdisciplinary geriatric team practice. *Clinical Psychology: Science and Practice, 10*(1), 85-101. https://doi.org/10.1093/clipsy.10.1.85

Thapa, D. K., Visentin,D., Kornhaber, R., & Cleary, M. (2018). Prevalence of mental disorders among older people in Nepal: A systematic review. *Kathmandu University Medical Journal, 16* (62), 181-190.

John, C & Christine, K. C. (2008). Aging in America. New York.

Tiwari, S. C., Pandey, N. M., & Singh, I. (2012). Mental health problems among inhabitants of old age homes. *Indian Journal of Psychiatry, 54 (2),* 144-148.

Udhayakumar, P & Ponnuswami, I. (2013). Gerontological mental health in India. *Journal of Research*. *1*(7), 9-12.

United Nations (UN). (2017). *World population prospects: Department of economic and social affairs.*

United Nations Fund for population Agency. (UNFPA). (2012). *Ageing in the 21st century: A celebration & a challenge.*

Watts, S. C., Bhutan, G. E., Stuot, I. H., Ducker, G. M., Cleator, P. J., Mc Garry, J., & Day, M. (2002). Mental health in older adult recipient of primary care services. *International Journal of Geriatric Psychiatry, 17*(5), 427-437.

Whiteford, H. A., Degenhardt, L., Rehm, J., Baxter, A. J., Ferrari, A. J., Erskine, H. E., Charlson, F, J., Norman, R. E., Flaxman, A. D., Johns, N., Burstein, R., Murray, C. J., & Vos, T. (2013). Global burden of disease attributable to mental and substance use disorders. *School of Population Health,* 382(9904),1575-1586. https://dx.doi.org/10.1016/S0140-6736 (13)61611-6

Woo, E. k., Han, C., Jo, S. A., Park, M. K., Kim, S., Kim, E., Park, M. H., Lee, J., & Jo, I. (2007). Morbidity and related factors among elderly people in South Korea. *BMC Public Health, 7*(10). https://doi.org/10.1186/1471-2458-7-10

World Health Organization (WHO). (2017). *Mental health and older adults.* https://www.who.int/mediacentre/factsheets/fs381/en/