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Activity of Daily Living of Elderly People in Rural Setting of Nepal: Situation and Scenarios in Present Context

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Abstract

Ageing is the global issue that affects almost all countries of the globe but its pace and level varies largely. The activities of daily living of elderly people are affected by various factors which reduce the activeness of elderly for their fullest contribution for development of society and nation. The activities of daily living are decreases with increasing the age and requires due medical care, support and treatment. The objective of this paper is to examine the contributing factors for activity of daily living in rural setting of Nepal. The cross-sectional study was carried out in Sunkoshi Rural Municipality, Sindhuli district in 2022 in which 413 elderly people aged 60+years were interviewed applying structured questionnaire. Chi-square test was employed to assess the association between dependent and independent variables whereas logistic regression was used to examine the contributing independent variables to activity of daily living. Of the total respondents, the significant proportion of respondents needed help for urination (50.12%) followed by carrying things (38.74%), walking (26.63%) and standing up (18.16%) whereas the least expressed that they need help for feeding (5.81%). Elderly having higher age have significantly higher likelihood of need of help for activity of daily living [70-79 years of age (OR=4.40, CI: 2.77-6.98) and 80+

years of age (OR=15.02, CI: 6.18-36.50)] than elderly aged 60-69 years of age. The likelihood of need of help for supporting daily activity is observed higher in joint family (OR=2.79, CI: 1.75-4.42) Janajati (OR=2.48, CI: 0.79-3.64) and having no provision of insurance (OR=2.88, CI: 0.97-8.55). The likelihood of need of help for daily activities is found higher among elderly who stopped working completely (OR=4.38, CI:1.46-3.34). The likelihood of seeking help for daily activity is significantly higher among elderly who do not involve in vigorous and moderate intensity activity and need of such help is observed highest among elderly who does not have capacity of grazing animals, putting grass and collecting dung. Daily activity of elderly people is the major symbol of active and successful ageing so it is most essential to promote the activity of daily living by ensuring and enhancing the aforementioned aspects.

Keywords: elderly, activity of daily living, odd ratio, health issue, food.

Introduction

Ageing is a major global issue as well as a trend that affects all countries despite variations in level, pace and momentum (WB, 2016). The world is witnessing a rapid demographic shift towards an elderly population as the life expectancy at birth is increasing over time due to advancements in medical sciences, education, food distribution, medicine, nutrition and sanitation conditions. As a core component of the population as well as an issue of the global community, ageing is currently a major concern of development agendas and discourses in both developed and developing nations. Most of the countries in the world are experiencing rapid population aging before reaching their economic maturity (United Nations, 2020). The rapidly increasing elderly population in Nepal is the most emerging demographic phenomenon (Thapa and Rai, 2022) which seeks policy and plan for the proper management of elderly people in Nepal. In Nepal, both the number and the proportion of elderly have been increasing over time. In 1981, the total number of elderly population aged 60+ years drastically increased by 3.47 times from 857,061 in 1981 to which 2,977,318 in 2021 representing 10.21 percent of the total population (CBS, 2014 & NSO, 2022).

UN has been celebrating the UN Decade of Healthy Ageing (2021-2030). The healthy and successful ageing depends on the activity of daily living. The longer life of the elderly brings opportunities for older people, their households and communities. Population ageing yields ample opportunities for sustainable development through their experience, knowledge and skills (UNDP, 2017). Since 2015, the United Nations has 17 SDGs which it has the provision to ensure healthy lives and promoting well-being for all at all ages in its Goal 3. This goal on the one hand provided ample ground

for developing legal and policy provisions related to the promotion of rights as well as the security of elderly people whereas on the other hand it has created the global forum for policy promulgation and implementation. Under this goal, Nepal has 13 targets including reduction of morbidity and mortality and providing universal health coverage (NPC, 2020).

Ageing is associated with a decline in motor function and the ability to perform daily activities. The disorder especially in the aspect of locomotion is one of the major disorders resulting in adverse health conditions among elderly people (Iwaya et al., 2017). Disability in activities of daily living is an adverse outcome of frailty that places a burden on elderly people, families, care providers, and the care system (Vermeulen, et al., 2011). Frailty is defined as a state of increased vulnerability to poor resolution of homeostasis after stress or events (Clegg, et al., 2013). The deterioration in health sometimes makes it impossible for older persons to perform basic activities such as eating, walking, taking a bath and going to the toilet on their own (Robert & Linda, 1990).

Age is regarded as the strongest predictors of severe activity of daily living among the elderly. Uneducated elderly, elderly consuming tobacco and elderly reported good self-rated health were less likely to report severe activity of daily living (Chauhan et al, 2022). Age, gender, place of residence and trust and solidarity factors are significantly associated with physical inactivity among aged persons (Patel et al., 2019). The likelihood of ADL was significantly higher among older adults aged 80+ years compared to 60-69 years. The elderly people who had poor self-reported health and suffered from chronic diseases were more likely to report ADL with AOR=2.95, CI: 1.51-3.83 and AOR=2.70, CI:2.31-3.43 respectively (Patel et al., 2021).

Ageing is a normal process associated with physical, social, and psychological changes (Dhungana & Dhungana, 2020) however elderly people differ from other population groups in terms of socioeconomic status, lifestyle, the presence of diseases, cognitive functions, and the need for care from family and society (Moncatar & Seino, 2019; Tyagi & Paltasngh, 2017). The activity of daily living and social participation of the elderly depends on the prosperity and amount of remittance sent by their children to some extent (Rai, 2020). In Nepal, an increasing number of elderly people are suffering from various health problems (Shrestha, 2013) that negatively affect the activity of daily living of elderly which reduces the participation in different spheres of life.

There are ample legal and policy provisions for ensuring both the rights as well as dignity of elderly people in Nepal. The Article 41 of the Constitution has the fundamental rights of senior citizens which states that the state should provide social

security and protection to senior citizens (GoN, 2015). The Senior Citizen Policy,2058 envisaged incorporating economic benefit, social security, health service facilities and honor, participation and involvement, and education as well as entertainment aspects to support the elderly people in having prestigious livelihood (GoN, 2058). The Section 11 (2) (P) of the Local Government Operation Act, 2017 has a special provision in regard to elderly care and security as provision of up to date recording of the elderly, the provision of ensuring social security with management and operation, provision of senior citizen centers and provision of senior citizen's club, day care centers (GoN, 2017). The Senior Citizen Act, 2063 has given high priority and representation in lawsuits, the formation of a central senior citizen welfare committee, the formation of a district senior citizen welfare committee, senior citizen welfare fund and the establishment and operation of care centre or day service centre is ensured and encouraged (GoN, 2063). However, the implementation aspect of the aforementioned legal and policy provisions are in a bleak situation referring to aggression in planning and regression in implementation.

The activity of daily living of elderly people is affected by various factors which reduce the activeness of the elderly for their fullest contribution for the development of society and nation. The activities of daily living are decreased with increasing the age and require due medical care, support and treatment. The successful, happy and contributing ageing is possible only through promoting physical, mental and social health which ultimately enhances the activity of daily living of elderly. The review of literature shows that most of the studies are focused mainly on health status of elderly. There is a scanty study on the activity of daily living in Nepal especially in the rural settings of Nepal. So the objective of this study is to examine the contributing factors for activity of daily living in rural setting of Nepal.

Methods

This study has employed the cross-sectional study design for assessing the activity of daily living in Sunkoshi Rural Municipality of Sindhuli district. The total area of Sindhuli district is 154.68 square kilometers which is remained as one of the thirteen districts of Bagmati Province having the accessibility of good road transportation i.e. BP highway. As per the census report of 2021, the total population of Sunkoshi Rural Municipality was 18,136 with 8,772 males and 9,364 females, representing 48.4 percent males and 51.6 percent females (NSO, 2022). The major seven caste/ethnicity residing in this rural municipality were Chhetri, Tamang, Magar, Brahman, Newar, Sarki, and Damai. Out of total population, the numbers of elderly people were 2,247

in which the numbers of male were 1,080 and 1,166 females. The sex ratio of older people in this rural municipality was 92.6.

Data Sources

This study uses primary data collected through a household survey. The data for this study was obtained through structured interviews with older people aged 60 and over. The questionnaire was developed after reviewing the World Health Organization Study of Global Ageing and Adult Health (SAGE) Wave 1 Individual Questionnaire, Questionnaire on 2018 Longitudinal Study of Ageing and Health in the Philippines (Cruz et. al., 2018) and Questionnaire of Household Survey on Health and Social Care Need Assessment of Older People (Bista et al., 2012).

Sample Size

The total sample of the study was 413 elderly people aged 60 years and above. The Epi-Info software was applied to determine the sample size for this study. The sample size was determined with the following parameters: proportion of health service utilization by elderly people (62%), 95 percent confidence interval, the margin of error 5 percent, design effect 1.2, and non-response rate 10 percent.

Sample and Sample Design

A two-stage sample design was used in this study. To begin, all wards in Sunkoshi rural municipality were chosen as primary sampling units (PSUs). In the second, the required sample size per ward was determined proportionally based on the number of older people aged 60 and over in the wards. The interview with an eligible respondent from the central catchment area of the ward was carried out with the consultation of key person of the ward. The visit households in was continued in a clockwise direction until the required number of sample was reached.

Variables

Independent Variables

The respondents' age, caste/ethnicity, marital status, education, types of family, working status, types of work, reason for stop working, receiving cash or kind, status of health, taking fruits, tobacco use, taking meat/fish, and vigorous as well as moderate intensity activity are considered as independent variables.

Dependent Variables

The activity of daily living of elderly people is regarded as the dependent variable. The activity of daily living is categorized into eight groups as bathing, dressing,

toileting, walking, urination, feeding, carrying things and standing up. These activities are categorized into "need help" which is coded as '1' and "no need of help" which is coded as '0'. These eight activities of daily living are translated into composite index as "ADLs".

Data Analysis

The STATA version 15.1 statistical software was employed for rigorous data analysis and statistical test. The demographic and socioeconomic differentials on the activity of daily living among the elderly people in Sunkoshi Rural Municipality was assessed through descriptive analysis whereas logistic regression analysis was performed to examine the factors contributing to activity of daily living of the elderly people.

Results and Discussion

Background Characteristics of Respondents

The demographic and socio-economic factors are central and crucial for determining the activities of daily living of elderly people ether in rural or urban setting of Nepal. The biological and wear and tear theories stress that older age has significant association with multiple diseases that reduces the active and healthy life of elderly people. Table 1 shows the demographic and socioeconomic characteristics of respondents of the study. The table reflects that the highest proportion of elderly were from 60-69 years of age (44.6%) which is followed by 70-79 years of age (39%) whereas about 16 percent belong to age group 80+ years. Males account for more than half of the elderly whereas about two-thirds of the elderly (62%) were married. Similarly, about two fifth elderly represented Janajati caste (74.3%) followed by Brahmin i.e. 21.3 percent. About 61 percent of the elderly were literate whereas about 17 percent elderly had SLC and above level of education. About 64 percent of the elderly live with their son/daughter-in-law.

The proportion of elderly living with jointly family was 61 percent which is more than two-fold of elderly living with nuclear family. About 49 percent of elderly were economically active whereas about 2 percent were not working but still looking for work. Of the total currently working elderly, about 73 percent were involved in agriculture, 7 percent involved in business whereas the least i.e. 2 percent were involved in service sector. Tobacco and alcohol are consumed by more than one-third and one-fifth of the elderly, respectively. About 71 percent elderly were suffered from different types of chronic diseases where 28 percent were not suffered from such types of diseases.

Table 1Demographic and Socio-economic Characteristics of Elderly

Background characteristics	Percentage	Number
Age group		
60-69	44.6	184
70-79	39.0	161
80+	16.5	68
Sex		
Male	51.6	213
Female	48.4	200
Current marital status		
Married	61.5	254
Other	38.5	159
Caste/Ethnicity		
Brahmin	21.3	88
Chhetri/Thakuri	4.4	18
Janajati	74.3	307
Religion		
Hindu	88.9	367
Buddha/Christian	11.1	46
Level of education		
Literate	60.6	77
Secondary	22.8	29
SLC and above	16.6	21
Living arrangement		
Living alone	9.7	40
Living with spouse and children	21.8	90
Living with son/daughter-in-law	63.9	264
Living with others	4.6	19

Type of family		
Nuclear family	25.7	106
Joint family	65.6	271
Alone	8.7	36
Current working status		
Working	48.7	201
Stop working completely	48.9	202
Not working but looking for work	2.4	10
Types of current work		
Agriculture	73.1	147
Business	7.0	14
Service	2.0	4
Household work	17.9	36
Tobacco use		
No	64.4	266
Yes	35.6	147
Alcohol use		
No	78.7	325
Yes	21.3	88
Disease status		
Yes	71.2	294
No	28.2	119
Total	100.0	413

The activity of daily living of elderly people is associated with the status of heath and types of diseases suffered from. The chronic health diseases like gastrointestinal diseases, high blood pressure, arthritis, asthma, and diabetes are the most common chronic conditions among the elderly in the study areas which directly and negatively affect the activity of daily living.

Figure 1

Percentage Distribution of Elderly People by Chronic Health Problems (Multiple Response)

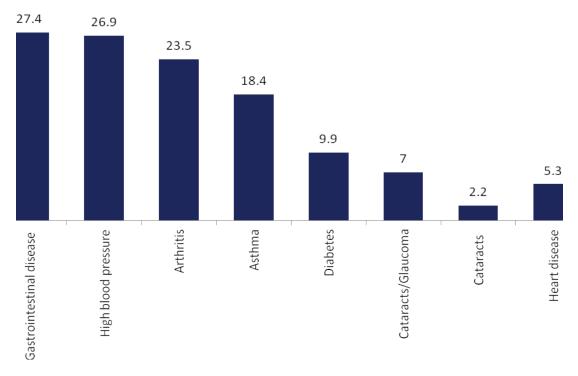
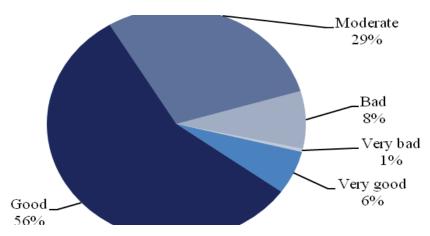


Figure 1 reveals the fact that about 27 percent of the elderly suffer from gastrointestinal disease, followed by high blood pressure (27%), arthritis (24%), and asthma (18%). About 10 percent of the elderly have diabetes, 7% have cataracts/glaucoma, and nearly 5% have heart disease.

The activity of daily living has direct relationship with health status of elderly people. The epitome status of health of elderly people is the example of nexus between good health and activity of daily living. The figure 2 illustrates the fact that majority of elderly people reported that they have good health status (56.4%) followed by moderate (29.1%) and bad (80%) whereas about 6 percent reported that they have very good health status.

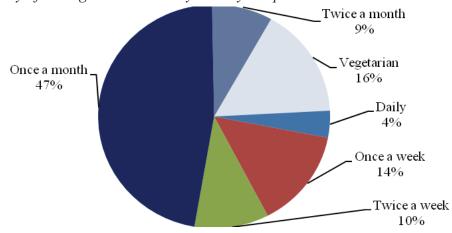
Figure 2

Rating of Health Status by Elderly Themselves



The intake of meat/fish enhances the health status that ensures the active live of elderly which also enhances the activity of daily living. The figure 3 reveals the fact that majority of elderly (47%) took meat/fish once in a month followed by once in a week (14%) whereas only 4 percent took daily.

Figure 3
Frequency of Taking Meat or Fish by Elderly People



Source: Field Survey, 2021.

Background Characteristics of Elderly People by Types of Activity of Daily Living

The background characteristics of respondents are the crucial factors for determining the types of activity of daily living. The proportion of elderly's need of help for bathing, dressing, toileting, walking, urination, feeding, carrying things and standing up for sitting is found highest among older ages. Table 2 reveal the fact that the highest proportion of elderly who are 80 years and above need help for carrying things (83.82%) followed by urination (75%), walking (64.71%), and standing up (42.65%). The need for same activities for elderly aged 60-69 years seems lower viz. 13.04 percent, 33.70 percent, 5.98 percent and 5.98 percent respectively.

Similarly, in terms of education the highest proportion of respondent who have up to secondary level of education (41.38%) need help for carrying things whereas respondents having SLC and above education do not need help for bathing, dressing, toileting and feeding i.e. 0.0%. About two third elderly who do not take egg need help for urination, similarly 66.36 percent who stopped working completely and about 42 percent elderly who involved in household work need help for urination. About 38 percent elderly who do not receive cash or kind and about 73 percent elderly who had bad health status need help for urination. Furthermore, about 51 percent elderly who do not take smoking/tobacco and 70 percent respondent who do not take fruits, about 61 percent elderly who take meat or fish once in a month and about 60 percent who have capacity to grazing, putting grass and collecting dung need help for urination.

Table 2 *Types of Activities of Daily Living by Background Characteristics*

Characteristics	Need Help for Bathing	Need Help for Dressing	Need Help for Toileting	Need Help for Waking	Need Help for Urination	Need Help for Feeding	Need Help for Carrying Things	Need Help for Standing Up
Age Group								
60-69	0.00	2.72	2.72	5.98	33.70	0.54	13.04	5.98
70-79	4.97	14.29	16.15	34.16	58.39	6.83	49.07	21.74
80+	8.82	39.71	36.76	64.71	75.00	17.65	83.82	42.65
P Value	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Level of Education								
Literate	14.29	14.29	14.29	27.27	44.16	3.90	35.06	16.88

Up to Secondary	17.24	17.24	20.69	24.14	37.93	13.79	41.38	24.14
SLC and above	0.00	0.00	0.00	9.52	38.10	0.00	23.81	4.76
P Value	0.001	0.150	0.099	0.236	0.790	0.066	0.433	0.189
Status of Taking Egg	5							
Yes	12.72	12.72	12.72	20.61	42.11	6.58	6.58	6.58
No	14.05	14.05	14.59	34.05	60.00	4.86	4.86	4.86
P Value	0.001	0.691	0.580	0.002	0.000	0.459	0.012	0.382
Status of Current Wo	orking Condi	tion						
Working	3.98	3.98	4.48	8.96	35.32	1.99	18.41	7.46
Stopped working completely	22.28	22.28	22.28	44.06	64.36	9.90	57.92	29.21
Not working but looking for work	20.00	20.00	66.67	30.00	60.00	0.00	60.00	10.00
P Value	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000
Reason for Stop Wor	king							
Retirement	0.00	0.00	0.00	10.00	40.00	0.00	10.00	10.00
Ill health/health reason	31.06	23.48	24.24	41.67	66.67	12.88	56.06	33.33
Not necessary to work	31.67	23.33	21.67	55.00	63.33	5.00	70.00	23.33
P Value	0.221	0.108	0.205	0.019	0.232	0.134	0.001	0.144
Types of Work/Occu	pation							
Agriculture	4.08	4.08	4.08	7.48	36.05	1.36	16.33	6.80
Business	0.00	0.00	0.00	0.00	21.43	0.00	7.14	0.00
Service	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Household work	5.56	5.56	8.33	19.44	41.67	5.56	33.33	13.89
P Value	0.001	0.805	0.542	0.071	0.258	0.390	0.049	0.296
Status of Receiving	Cash or Kind	I						
Yes	3.70	0.00	0.00	0.00	18.52	0.00	3.70	0.00
No	6.90	4.60	5.17	10.34	37.93	2.30	20.69	8.62
P Value	0.001	0.256	0.227	0.080	0.050	0.426	0.034	0.113
Status of Health								
Very Good	0.00	0.00	0.00	4.00	12.00	0.00	4.00	0.00
Good	6.87	6.87	8.15	18.45	47.21	2.58	27.90	9.01

Moderate	22.50	22.50	21.67	38.33	57.50	12.50	58.33	30.83	
Bad	30.30	30.30	27.27	54.55	72.73	9.09	66.67	45.45	
P Value	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	
Status of Taking Smoke/Tobacco									
Yes	10.53	6.58	7.24	18.42	48.68	2.63	28.29	8.55	
No	22.22	17.24	17.24	31.42	50.96	7.66	44.83	23.75	
P Value	0.002	0.002	0.003	0.004	0.656	0.035	0.001	0.000	
Status of Taking Ban	ana, Mango,	Apple, Ora	nge etc.						
Eat Regularly	11.54	11.54	15.38	34.62	42.31	3.85	61.54	30.77	
Some time	13.53	13.53	13.53	26.26	50.13	6.10	36.87	16.71	
No	10.00	10.00	10.00	20.00	70.00	0.00	50.00	40.00	
P Value	0.001	0.913	0.386	0.577	0.330	0.651	0.034	0.038	
Frequency of Taking	Meat or Fish	1							
Daily	25.00	18.75	18.75	31.25	31.25	18.75	43.75	25.00	
Once a week	20.34	15.25	13.56	20.34	33.90	5.08	27.12	10.17	
Twice a week	13.95	9.30	9.30	9.30	32.56	6.98	20.93	9.30	
Once a month	15.98	12.37	11.86	27.32	61.34	3.61	41.75	20.10	
Twice a month	20.00	17.14	20.00	28.57	40.00	8.57	40.00	25.71	
Vegetarian	21.21	13.64	16.67	39.39	53.03	7.58	50.00	19.70	
P Value	0.876	0.802	0.018	0.000	0.000	0.177	0.019	0.203	
Capacity of Grazing	Animals, Put	t Grass and	Collecting 1	Dung					
Yes	5.30	3.64	4.30	17.88	46.36	0.33	28.48	6.95	
No	52.25	39.64	38.74	50.45	60.36	20.72	66.67	48.65	
P Value	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	
Total (%)	17.92	13.32	13.56	26.63	50.12	5.81	38.74	18.16	
Total (N)	74	55	56	110	207	24	160	75	

Activity of Daily Living of Elderly People in Rural Setting of Nepal

The results of the Odds Ratio (OR) is presented in Table 3.In this model, the composite index is created by merging the types of activity of daily living. According to Table 3, it is observed that the need of help of either types of activity of daily living is increasing along with increment in age of elderly people. The result reveals the fact that elderly having higher age have significantly higher likelihood of need of help for

activity of daily living [70-79 years of age (OR=4.40, CI: 2.77-6.98) and 80+ years of age (OR=15.02, CI: 6.18-36.50)] than elderly aged 60-69 years of age (reference group, OR=1). Similarly, the likelihood of need of help for supporting daily activity is observed higher in joint family (OR=2.79, CI: 1.75-4.42) Janajati (OR=2.48, CI: 0.79-3.64) and having no provision of insurance (OR=2.88, CI: 0.97-8.55). The likelihood of need of help for daily activities is found higher among elderly who stopped working completely (OR=4.38, CI:1.46-3.34).

Similarly, the likelihood of need of help for activity of daily living is higher among elderly who involved in household work (OR=2.96, CI:1.35-6.43) whereas lower among elderly who involved in business (OR=0.35, CI:0.09-1.32). The likelihood of need of help for activity of daily living is higher among elderly who do not receive cash or kind (OR: 4.40, CI: 1.59-12.15) and the likelihood of such need is significantly higher among elderly with bad health status (OR: 38.06, CI:8.53-169.80), moderate health status (OR=13.84, CI:4.42-43.36) than very good health status (reference group, OR=1). The likelihood of need of support is two times higher among elderly who do not take fruits whereas need of such support is observed highest among vegetarian elderly (OR=1.60, CI:0.51-5.04). The habit of taking egg seems positive for promoting good health. The likelihood of need of help for activity of daily living is found higher among elderly who never eat egg (OR=2.63, CI:1.36-5.09) compared to elderly who take egg twice a week (OR=0.87, CI:0.38-2.00). The intensity activity also has significant effect on activity of daily living of elderly people. The likelihood of seeking help for daily activity is significantly higher among elderly who do not involve in vigorous and moderate intensity activity i.e. (OR=12.27, CI:7.60-19.83) and (OR=4.27, CI:2.57-7.08) respectively and such help is observed highest with elderly who does not have capacity of grazing animals, putting grass and collecting dung (OR=3.68, CI: 2.16-6.28).

Table 3Odd Ratio and 95% Level of Significance for Activities of Daily Living of Elderly People Living in Rural Setting of Nepal

Characteristics	Activities of Daily Living				
Characteristics	Odds Ratio	Standard Error	Z-Value	95 Percent C.I.	
Age Group					
60-69®	1				
70-79	4.40***	1.04	6.27	2.77-6.98	
80+	15.02***	6.80	5.98	6.18-36.50	
Types of Family					
Nuclear®	1				
Joint	2.79***	0.66	4.35	1.75-4.42	

Caste/Ethnicity Brahmin® 1 Chhetri/Thakuri 0.73 0.39 -0.60 0.26-4.0 Janajati 2.48*** 0.61 3.69 1.53- Marriad Status 1 0.33 2.01 1.01-2.3 Level of Education 1 1 1.01-2.3 1.01-2.3 Literate® 1 1 1.01-2.3
Chhetri/Thakuri 0.73 0.39 -0.60 0.26-4.0 Janajati 2.48*** 0.61 3.69 1.53- Marital Status Married® Other 1.54** 0.33 2.01 1.01-2.3 Level of Education Literate® Up to Secondary 0.83 0.36 -0.43 0.35-1.9 SLC and above 0.41 0.21 -1.74 0.15-1.1 Status of Taking Egg Yes® No 2.20*** 0.47 3.74 1.46-3.3 Status of Current Working Condition
Janajati 2.48*** 0.61 3.69 1.53- Marital Status Married® 1 Other 1.54** 0.33 2.01 1.01-2.3 Level of Education Literate® 1 Up to Secondary 0.83 0.36 -0.43 0.35-1.9 SLC and above 0.41 0.21 -1.74 0.15-1.1 Status of Taking Egg 1 No 2.20*** 0.47 3.74 1.46-3.3 Status of Current Working Condition
Marital Status Married® 1 Other 1.54** 0.33 2.01 1.01-2.3 Level of Education 1 Up to Secondary 0.83 0.36 -0.43 0.35-1.9 SLC and above 0.41 0.21 -1.74 0.15-1.1 Status of Taking Egg 1 No 2.20*** 0.47 3.74 1.46-3.3 Status of Current Working Condition
Married® 1 Other 1.54** 0.33 2.01 1.01-2.3 Level of Education Literate® Up to Secondary 0.83 0.36 -0.43 0.35-1.9 SLC and above 0.41 0.21 -1.74 0.15-1.1 Status of Taking Egg 1 No 2.20*** 0.47 3.74 1.46-3.3 Status of Current Working Condition
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Level of Education Literate® 1 Up to Secondary 0.83 0.36 -0.43 0.35-1.9 SLC and above 0.41 0.21 -1.74 0.15-1.1 Status of Taking Egg 1 No 2.20*** 0.47 3.74 1.46-3.3 Status of Current Working Condition
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Up to Secondary 0.83 0.36 -0.43 0.35-1.9 SLC and above 0.41 0.21 -1.74 0.15-1.1 Status of Taking Egg Yes® 1 No 2.20*** 0.47 3.74 1.46-3.3 Status of Current Working Condition
SLC and above 0.41 0.21 -1.74 0.15-1.1 Status of Taking Egg 1 No 2.20*** 0.47 3.74 1.46-3.3 Status of Current Working Condition 3.74
SLC and above 0.41 0.21 -1.74 0.15-1.1 Status of Taking Egg 1 No 2.20*** 0.47 3.74 1.46-3.3 Status of Current Working Condition 3.74
Yes® 1 No 2.20*** 0.47 3.74 1.46-3.3 Status of Current Working Condition
No 2.20*** 0.47 3.74 1.46-3.3 Status of Current Working Condition
Status of Current Working Condition
Working® 1
Stopped working completely 4.38*** 0.98 6.63 2.83-6.7
Not working but looking for work 2.76 1.95 1.44 0.70-1.0
Reason for Stop Working
Retirement® 1
Ill health/health reason 5.83*** 3.97 2.59 1.54-22.
Not necessary to work 7.50*** 5.49 2.75 1.78-31.
Types of Work/Occupation
Agriculture® 1
Business 0.35 0.24 -1.55 0.09-1.3
Household work 2.95*** 1.17 2.71 1.35-6.4
Status of Receiving Cash or Kind
Yes® 1
No 4.40*** 2.28 2.86 1.59-12.
Status of Health
Very Good® 1
Good 7.36*** 4.13 3.56 2.45-22.
Moderate 13.84*** 8.06 4.51 4.42-43.
Bad 38.06*** 29.04 4.77 8.53-169.
Status of Taking Smoke/Tobacco
Yes® 1
No 1.42 0.30 1.67 0.94-1.9
Status of Taking Banana, Mango, Apple, Orange etc.
Eat Regularly® 1

No 2.12 1.89 0.84 0.37-12.16 Frequency of Taking Meat or Fish Daily® 1 Once a week 0.51 0.29 -1.18 0.16-1.57 Twice a week 0.39 0.24 -1.55 0.12-1.28 Once a month 1.37 0.74 0.59 0.48-3.95 Twice a month 0.90 0.56 -0.17 0.27-3.04 Vegetarian 1.60 0.94 0.80 0.51-5.04 Frequency of Taking Egg Daily® 1 Once a week 1.40 0.48 0.98 0.72-2.73 Twice a week 0.87 0.37 -0.33 0.38-2.00 Never eat 2.63*** 0.89 2.86 1.36-5.09 Status of Doing Vigorous Intensity Activity Yes® 1 No 12.27*** 3.00 10.24 7.60-19.83 Status of Doing Moderate Intensity Activity Yes® 1 No 4.27*** 1.10 5.61 2.57-7.08 Capacity of Grazing Animals, Put Grass and Collecting Dung Yes® 1 No 3.68*** 1.00 4.78 2.16.6.28	Some time	0.86	0.36	-0.36	0.37-1.97
Daily® 1 Once a week 0.51 0.29 -1.18 0.16-1.57 Twice a week 0.39 0.24 -1.55 0.12-1.28 Once a month 1.37 0.74 0.59 0.48-3.95 Twice a month 0.90 0.56 -0.17 0.27-3.04 Vegetarian 1.60 0.94 0.80 0.51-5.04 Frequency of Taking Egg Daily® 1 0.98 0.72-2.73 Twice a week 1.40 0.48 0.98 0.72-2.73 Twice a week 0.87 0.37 -0.33 0.38-2.00 Never eat 2.63*** 0.89 2.86 1.36-5.09 Status of Doing Vigorous Intensity Activity Yes® 1 No 12.27*** 3.00 10.24 7.60-19.83 Status of Doing Moderate Intensity Activity Yes® 11 No 4.27*** 1.10 5.61 2.57-7.08 Capacity of Grazing Animals, Put Grass and Collecting Dung Yes® 1	No	2.12	1.89	0.84	0.37-12.16
Once a week 0.51 0.29 -1.18 0.16-1.57 Twice a week 0.39 0.24 -1.55 0.12-1.28 Once a month 1.37 0.74 0.59 0.48-3.95 Twice a month 0.90 0.56 -0.17 0.27-3.04 Vegetarian 1.60 0.94 0.80 0.51-5.04 Frequency of Taking Egg Daily® 1 0.00 0.48 0.98 0.72-2.73 Twice a week 0.87 0.37 -0.33 0.38-2.00 Never eat 2.63*** 0.89 2.86 1.36-5.09 Status of Doing Vigorous Intensity Activity 1 No 10.24 7.60-19.83 Status of Doing Moderate Intensity Activity 11 No 4.27*** 1.10 5.61 2.57-7.08 Capacity of Grazing Animals, Put Grass and Collecting Dung 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Frequency of Taking Meat or Fish				
Twice a week 0.39 0.24 -1.55 0.12-1.28 Once a month 1.37 0.74 0.59 0.48-3.95 Twice a month 0.90 0.56 -0.17 0.27-3.04 Vegetarian 1.60 0.94 0.80 0.51-5.04 Frequency of Taking Egg Daily® 1 Once a week 1.40 0.48 0.98 0.72-2.73 Twice a week 0.87 0.37 -0.33 0.38-2.00 Never eat 2.63*** 0.89 2.86 1.36-5.09 Status of Doing Vigorous Intensity Activity Yes® 1 No 12.27*** 3.00 10.24 7.60-19.83 Status of Doing Moderate Intensity Activity Yes® 11 No 4.27*** 1.10 5.61 2.57-7.08 Capacity of Grazing Animals, Put Grass and Collecting Dung Yes® 1	Daily®	1			
Once a month 1.37 0.74 0.59 0.48-3.95 Twice a month 0.90 0.56 -0.17 0.27-3.04 Vegetarian 1.60 0.94 0.80 0.51-5.04 Frequency of Taking Egg Daily® 1 0.00 0.48 0.98 0.72-2.73 Twice a week 0.87 0.37 -0.33 0.38-2.00 Never eat 2.63*** 0.89 2.86 1.36-5.09 Status of Doing Vigorous Intensity Activity 1 No 10.24 7.60-19.83 Status of Doing Moderate Intensity Activity 11 No 4.27*** 1.10 5.61 2.57-7.08 Capacity of Grazing Animals, Put Grass and Collecting Dung Yes® 1	Once a week	0.51	0.29	-1.18	0.16-1.57
Twice a month 0.90 0.56 -0.17 0.27-3.04 Vegetarian 1.60 0.94 0.80 0.51-5.04 Frequency of Taking Egg Daily® 1 Once a week 1.40 0.48 0.98 0.72-2.73 Twice a week 0.87 0.37 -0.33 0.38-2.00 Never eat 2.63*** 0.89 2.86 1.36-5.09 Status of Doing Vigorous Intensity Activity Yes® 1 No 12.27*** 3.00 10.24 7.60-19.83 Status of Doing Moderate Intensity Activity Yes® 11 No 4.27*** 1.10 5.61 2.57-7.08 Capacity of Grazing Animals, Put Grass and Collecting Dung Yes® 1	Twice a week	0.39	0.24	-1.55	0.12-1.28
Vegetarian 1.60 0.94 0.80 0.51-5.04 Frequency of Taking Egg Daily® 1 Once a week 1.40 0.48 0.98 0.72-2.73 Twice a week 0.87 0.37 -0.33 0.38-2.00 Never eat 2.63*** 0.89 2.86 1.36-5.09 Status of Doing Vigorous Intensity Activity Yes® 1 No 10.24 7.60-19.83 Status of Doing Moderate Intensity Activity Yes® 11 No 4.27*** 1.10 5.61 2.57-7.08 Capacity of Grazing Animals, Put Grass and Collecting Dung Yes® 1 1	Once a month	1.37	0.74	0.59	0.48-3.95
Daily®	Twice a month	0.90	0.56	-0.17	0.27-3.04
Daily® 1 Once a week 1.40 0.48 0.98 0.72-2.73 Twice a week 0.87 0.37 -0.33 0.38-2.00 Never eat 2.63*** 0.89 2.86 1.36-5.09 Status of Doing Vigorous Intensity Activity Yes® 1 No 12.27*** 3.00 10.24 7.60-19.83 Status of Doing Moderate Intensity Activity Yes® 11 No 4.27*** 1.10 5.61 2.57-7.08 Capacity of Grazing Animals, Put Grass and Collecting Dung Yes® 1	Vegetarian	1.60	0.94	0.80	0.51-5.04
Once a week 1.40 0.48 0.98 0.72-2.73 Twice a week 0.87 0.37 -0.33 0.38-2.00 Never eat 2.63*** 0.89 2.86 1.36-5.09 Status of Doing Vigorous Intensity Activity Yes® 1 1 No 12.27*** 3.00 10.24 7.60-19.83 Status of Doing Moderate Intensity Activity Yes® 11 11 10 5.61 2.57-7.08 Capacity of Grazing Animals, Put Grass and Collecting Dung Yes® 1 1 1 1 1	Frequency of Taking Egg				
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Never eat 2.63*** 0.89 2.86 1.36-5.09 Status of Doing Vigorous Intensity Activity Yes® 1 1 No 10.24 7.60-19.83 Status of Doing Moderate Intensity Activity Yes® 11 No 4.27*** 1.10 5.61 2.57-7.08 Capacity of Grazing Animals, Put Grass and Collecting Dung Yes® 1 1	Once a week	1.40	0.48	0.98	0.72-2.73
Status of Doing Vigorous Intensity Activity Yes® 1 No 12.27*** 3.00 10.24 7.60-19.83 Status of Doing Moderate Intensity Activity Yes® 11 1.10 5.61 2.57-7.08 Capacity of Grazing Animals, Put Grass and Collecting Dung 1 Yes® 1	Twice a week	0.87	0.37	-0.33	0.38-2.00
Yes® 1 No 12.27*** 3.00 10.24 7.60-19.83 Status of Doing Moderate Intensity Activity Yes® 11	Never eat	2.63***	0.89	2.86	1.36-5.09
No 12.27*** 3.00 10.24 7.60-19.83 Status of Doing Moderate Intensity Activity Yes® 11 No 4.27*** 1.10 5.61 2.57-7.08 Capacity of Grazing Animals, Put Grass and Collecting Dung Yes® 1	Status of Doing Vigorous Intensity Act	ivity			
Status of Doing Moderate Intensity Activity Yes® 11 No 4.27*** 1.10 5.61 2.57-7.08 Capacity of Grazing Animals, Put Grass and Collecting Dung Yes® 1	Yes®	1			
Yes® 11 No 4.27*** 1.10 5.61 2.57-7.08 Capacity of Grazing Animals, Put Grass and Collecting Dung 1 4.27*** 1.10 5.61 2.57-7.08	No	12.27***	3.00	10.24	7.60-19.83
$\begin{tabular}{c c c c c c c c c c c c c c c c c c c $	Status of Doing Moderate Intensity Ac	tivity			
Capacity of Grazing Animals, Put Grass and Collecting Dung Yes® 1	Yes®	11			
Yes® 1	No	4.27***	1.10	5.61	2.57-7.08
	Capacity of Grazing Animals, Put Gras	ss and Collecting Dung			
No. 2.68*** 1.00 4.79 2.16.6.29	Yes®	1			
1100 3.00 1.00 4.70 2.10-0.20	No	3.68***	1.00	4.78	2.16-6.28

^{***}significant at P≤0.000, ** P≤0.01, *** P≤0.05 and ®refers reference group.

Conclusion

The rapidly increasing proportion and number of elderly people of Nepal are remained as the boon for the sustainable development of the country if they perform the better DAL. Different types of daily activities are the crucial aspect for health and successful ageing. But the elderly are at the cross road of suffering from different types of communicable and non-communicable diseases which increases the cost of health expenditure and reduces the number of active ageing. The food habits like status of taking fruits, egg, meat/fish, and participation in different activities, education, health status, current working status and provision of cash/in-kind transfer are the factors that crucial to determine active activity of daily living of elderly people. The ADL is significantly influenced by older ages, living in joint family, caste, status of working condition, status of receiving cash or kind, status of health, status of taking fruits,

meat/fish, egg and status of doing intensity activity. Daily activity of elderly people is the major symbol of active and successful ageing. So, it is most essential to promote the daily activities by ensuring and enhancing the aforementioned aspects.

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References

- Bista, P. S. P., Ram Saran, Govind, S., & Shakya, D. V. G., Krishna Murari. (2012). Health and social care needs assessment of elderly: The context of piloting service developments and care of elderly in Pharping, Kathmandu, Nepal. Central Department of Population Studies and Ageing Nepal.
- CBS (2014). Population Monograph Volume II. Central Bureau of Statistics.
- Chauhan, S., Patel, R., & Kumar, S. (2022). Prevalence, factors and inequalities in chronic disease multimorbidity among older adults in India: Analysis of cross-sectional data from the nationally representative Longitudinal Aging Study in India (LASI). *BMJ Open, 12*(3), e053953. https://doi.org/10.1136/bmjopen-2021-053953
- Clegg A, Young J, Iliffe S, Rikkert MO, Rockwood K. Frailty in elderly people. *Lancet.* 2013;381(9868):752–762. doi: 10.1016/S0140-6736(12)62167-9
- Cruz, G. T., Cruz, C. J. P., & Saito, Y. (Eds.). (2018). Ageing and health in the Philippines. *Economic Research Institute for ASEAN and East Asia (ERIA)*.
- Dhungana, A. R., & Dhungana, P. (2020). Health status of elderly people living in old aged homes in Pokhara. *Journal of Karnali Academy of Health Sciences*, *3*(2), 28-35. https://doi.org/10.3126/jkahs.v3i2.31385
- GoN (2015). *The Constitution of Nepal 2015*. Ministry of Law, Justice and Federal Affairs, the Government of Nepal.
- GoN (2074). *Local Government Operation Act 2074*. Ministry of Law, Justice and Federal Affairs, the Government of Nepal.
- GoN (2063). *Senior Citizen Act 2063*. Ministry of Law, Justice and Federal Affairs, the Government of Nepal.
- GoN (2065). *Senior Citizen Rules 2065*. Ministry of Law, Justice and Federal Affairs, the Government of Nepal.

- Iwaya T, Doi T, Seichi A, Hoshino Y, Ogata T, Akai M. Characteristics of disability in activity of daily living in elderly people associated with locomotive disorders. *BMC Geriatric*. 2017 July 26;17(1):165. doi: 10.1186/s12877-017-0543-z. PMID: 28747158; PMCID: PMC5527391.
- Moncatar, T. R. N., Keiko: Rahman, Mosiur, & Seino, K. (2019). Health status and health facility utilization of community-dwelling elderly living alone in the Philippines: A nationwide cross-sectional study. *Health 11*(11),1554-1572 https://doi.org/10.4236/health.2019.1111117
- NPC (2020). Sustainable Development Goals: Progress Assessment Report 2016-19. National Planning Commission.
- NSO (2023). National Population and Housing Census 2021: National Report. National Statistics Office.
- Patel R, Srivastava S, Kumar P, Chauhan S, Govindu MD, Jean Simon D (2021). Socio-economic inequality in functional disability and impairments with focus on instrumental activity of daily living: a study on older adults in India. *BMC Public Health*. 12;21(1):1541. doi:10.1186/s12889-021-11591-1
- Rai, M.K. (2020). Role of Foreign Labour Migration to uplift the Health Status of Left Behind Elderly in Nepal. *Humanities and Social Sciences Journal*, 12 (143-154).
- Robert H. & Linda K. George (1990). *Handbook of Ageing and the Social Sciences*. 3rd Ed. Academic Press.
- Shrestha, L. (2013). Geriatric health in Nepal: Concerns and experience. *Nepal Medical College Journal*, 15(2), 148-152.
- Thapa, Naba Raj & Rai, M.K. (2022). Morbidity Patterns and Associated Factors among Elderly People: The Case of Sunkoshi Rural Municipality, Nepal. *Humanities and Social Sciences Journal 14* (1) (90-100). DOI: https://doi.org/10.3126/hssj.v14i1.58000
- Tyagi, R., & Paltasingh, T. (2017). Determinants of health among senior citizens: some empirical evidences. *Journal of Health Management, 19*(1), 132-143. https://doi.org/10.1177/0972063416682613
- UNDP (2017). Ageing, Older Persons and The 2030 Agenda for Sustainable Development. United Nations Development Program.
- UN (2020). World population ageing 2019. United Nations, Department of Economic and Social Affairs.
- Vermeulen J, Neyens JCL, van Rossum E, Spreeuwenberg MD, de Witte LP. (2011). Predicting ADL disability in community-dwelling elderly people using physical frailty indicators: A systematic review. *BMC Geriatric*, 11(33). doi:10.1186/1471-2318-11-33