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Factors Affecting Utilization of Health Services Among Elderly of Koshi Province, Nepal

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Abstract

Every country in the world is experiencing growth in the number and proportion of older persons. Aging is poised to become one of the most significant social transformations of the twenty-first century which affects all sectors of society. Aim of study was to assess factors affecting the utilization of health services among the elderly of Koshi province, Nepal. A quantitative descriptive cross-sectional study was conducted among 357 elderly. A multistage sampling technique was recruited for the selection of eight municipalities and wards for obtaining a representative sample from each ward. A semi structured interview schedule was used for data collection procedure. Descriptive statistics and inferential statistics were used after the normality test to measure the association of selected variables and utilization of health services. The study finding revealed that more than two-third (70.3) of the respondents was young old age. More than half of the respondents were female. Less than half (44.0%) of the respondents were hypertensive. A multivariate analysis revealed that the utilization of health services is higher among service holder elderly than non-service holder. The utilization health services by elderly were higher who had health insurance than who had not insurance service. The study concludes that only two-thirds of the elderly were satisfied with health insurance services facilities. Although One-thirds of elderly still not satisfied with the health insurance service facility so improve and easy access insurance service to elderly is essential.

Keywords: Elderly, health service utilization, health insurance, multistage sampling, care facility

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Introduction

People are living longer lives increased rapidly throughout the world. By 2050, the global population aged 60 and older is predicted to reach two billion. Now a day, 125 million individuals are 80 years. By 2050, 80% of the elderly will reside in low-middle-income countries (United Nation, 2019). Even though, elder people face more barriers to access and utilization than other groups due to a various factors ranging from their physical situation to disabilities and mental problems. Radwan et al., (2020) argued that elderly faced many challenges as preventive measures, misinformation, their health well-being, inadequate access to nutritional foods and violence during Covid-19 period. Every country in the entire world population is an increase in the number and proportion of elderly people. Ageing is place to become one of the most important social transformations of the twenty-first century. All sectors of society, including labor and financial markets, the demand for goods and services such as housing, transportation, and social protection, as well as family structures (WHO, 2018). In China, Jiang et al. (2018) reported a 19% incidence of diseases and a 14.5% two-week attendance rate to outpatient care. The percentage of not seeking medical care was 23.9%, although the rate of hospitalization was just 16.5%. Outpatient health care utilization was low for sensory problems, loneliness or nervousness, low life satisfaction, limitations on daily activities, deteriorating health, and having a chronic condition.

Similarly in Nepal, the total aging population is 2.5 million (2,521,000) which are almost 8.7% of the country's total population. The estimate of the proportion of older people is expected to double to 18.6% in 2050 with 6.5 million (6, 568000) people aged over 60 years (Help Age International network member in Asian Pacific, 2019). Projections of population for urban and rural areas are increased day by day; life expectancy at birth is increased. Urban population is increasing by 17.07%, in 2011, 19.53% in 2016 and 30.18% in 2031 respectively. Rural population was 82.93% in 2011, 80.47% in 2016 and 69.82% in 2031. Estimated percentage of the 65 years and over population has increased by 5.43% in 2011 to 6.68% in 203 (Central Bureau of Statistic, 2014).

Similarly, more than half (57.6%) of the elderly population is avoid going to or getting admitted in healthcare facilities in times of need. Only 42.4% of the elderly had utilized healthcare facilities in case of need. A few (27.6%) of elderly feel the most common reason for not utilize healthcare facilities are the cost of hospital care., 26.4% of elderly feel their illness is not important enough, 0.8 % of stated that their children did not allow them to get admitted in hospitals, they do not believe in allopathic drugs (Indumathi & Vinayagaram, 2020).

Older people with higher education, communist party membership, urban residence, non-agricultural household registration, better financial situation are more likely to have physical examinations or inpatient care (Gong et al., 2016). Men were less likely to use outpatient health services than women. The prevalence of use of health care Facilities by elders is 70% visited by a health facility (Jiang et al., 2018). Various studies show that more than half of the elderly not attend to health service facility. However, females are less likely to use inpatient care. Why less

than half of the elderly people not use the health care service? It is a debatable issue so this paper was to assess the factors associated with the utilization of health care among elderly people.

Methods and Materials

Study Design

A quantitative descriptive cross-sectional study was conducted to assess the factors affecting the utilization of health services among elderly of the Koshi Province which is located in the easternmost part of Nepal. The study was conducted in Morang Jhapa Dhankuta and Ilam (4 districts) of Koshi province.

Sampling Procedure

For this study, a multistage sampling technique was recruited for the selection of the setting. At first stage, a total of 4 districts were selected among the 14 districts of Koshi province following the quota sampling (for the inclusion of both the hilly and Terai region). Among four, two districts were_selected from the hilly region and two districts were from the Terai region. In the 2nd stage, two municipalities (one urban and one rural) was selected from each district via a simple random sampling method. A total of eight municipalities were recruited. And one ward from each municipality was selected randomly by lottery method from those assigned municipalities considering the samples (i. e. 45 from each ward) needed. This final selection of individuals was based on the purposive sampling technique. To make the sample more representatives, the selected ward was visited and a bottle was rotated at the middle junction and the first household was chosen in the direction that the bottle pointed. Then every alternate house was taken for the study until the desired sample size is fulfilled. If there is more than one elderly in one house the sample was chosen randomly by lottery method. If there are no elders in the selected household, the adjacent household with sample criteria was taken for the data.

Sample size

$n= z^2pq/d^2=323$

Total sample size =356 (including 10% non-responding rate)

Sample Size is calculated at 95% confidence interval and 80% power taking the 70% prevalence of utilization of health care services in a study done in Pokhara Lekhnath Municipality, Nepal (Acharya et al, 2019). The total calculated sample size is 356. Purposive sampling was done to obtain a representative sample.

Inclusion criteria

People of Age 60 years and above willing to participate in the study was included in the study and those with diagnosed mental health problems under medication, severely ill who needed emergency care was excluded from the study.

Instrumentation

A semi-structured interview schedule was developed by researchers based on the

objectives of the study. The questionnaire was divided into three parts. Semi-structured interview-based questionnaires were designed as such to collect information regarding socio-demographic and personal and other factors. A structured questionnaire was adopted by the researcher as per the Study of Global Aging and Adult Health (SAGE)'s questions on "Health Care Utilization" (WHO, 2006). The questionnaire is divided into three parts. **Part I:** It was consisted of questionnaires related to socio-demographic and psychosocial factors of the elderly. The researchers were developed this after the literature review. **Part II** was consisted of questionnaires related to the present health problems of the elderly. The researchers were developed this after the literature review. **Part III** was consisted of questionnaires related to the utilization of health services by the elderly. It was a structured questionnaire that was adopted by the researcher as per the Study of Global Aging and Adult Health (SAGE)'s questions on "Health Care Utilization" (WHO, 2006).he instrument was developed in the English language and translated into the Nepali language and then back-translated into English. The tool was pretested among 10% (36) of older adults in a ward of Biratnagar Metropolitan City, the ward that would be excluded during the random selection of the settings. Following the pretest, the necessary revision was made.

Ethical Consideration

Ethical clearance was obtained from the Institutional Review Committee (IRC) of Tribhuvan University Institute of Medicine (TU, IoM) Maharajgunj and Ref. No (68(C-11) E2 078/079). Verbal and written permissions were obtained from the Ward chairman of selected areas prior to carrying out the data collection procedure. Written informed consent was obtained from each participant before the interview. Confidentiality of their information was ensured by coding the interviews. Precaution was taken in every step of the study to safeguard the right and welfare of the participants throughout and after the study.

Data Collection Procedure

Data was collected through face-to-face interviews using a structured interview schedule in March and April of 2021. Each respondent was given 15-20 minutes during the interview. The collected data was reviewed for completeness and edited on the same day to minimize recall bias and assure the quality and accuracy of the study.

Data Analysis Plan

At the end of the interview, the questionnaire was quickly assessed for completeness and accuracy. Collected data was then be edited, classified, coded, and then entered into Microsoft Excel and exported to the statistical package for Social Sciences (SPSS) version 16 for analysis. Descriptive statistics (frequency, percentage, mean, standard deviation, and range) was used to describe the independent (socio-demographic and psycho social) and dependent (utilization of health services by elderly). After the normality test, inferential statistics was used to measure the association of selected variables and the utilization of health services. The significance level was set at p value ≤ 0.05 and 95% of confidence interval.

Results and Discussion

Table 1

Socio- demographic Characteristics of respondent (in all table)

n=357

Characteristics	Frequency (f)	Percentage (%)
Age (years)		
60-69	251	70.3
70-79	82	23.0
≥80	23	6.4
Mean±SD	70.89±8.35	
Sex		
Male	168	47.0
Female	189	52.9
Education level		
Illiterate	166	43.69
Literate only	111	31.1
Primary	16	4.5
Secondary	16	4.5
SLC	24	6.7
I A	17	4.8
Bachelor and above	7	2.0
Ethnicity		
Bramin/Chhetri	172	48.1
Janajati	129	36.1
Madeshi	33	9.2
Dalit	17	4.8
Muslim	6	1.7
Religion		
Hindu	277	77.5
Budhist	26	7.3
Kirat	44	12.3
Criastian	4	1.1
Muslim	6	1.7
Marital Status		
Married	266	74.5
Widow	70	19.6
Wider	17	4.8
Single hood	4	1.1
Type of family		
Neutral	181	50.7
Joint	176	49.3
Pace of Resident		
Urban	180	50.56
Rural	177	49.57

Table 1 shows that more than two-thirds (70.3) of the respondents were young old age. Nearly half (47%) of the respondents were female. Likewise less than half of the respondents were illiterate. Less than half (48.1%) of the respondents were Brahmin/Chhetri. Similarly three-forth (77.5%) of the respondents were Hindus. Similarly, more than half (50.4%) of the respondents were resided on urban place.

Table 2 revealed that more than half (50.4%) of the respondents were resided on urban place. more than half (52.5%) of the respondent's monthly income were Rs. 6000-10000. Less than half of the respondent's occupations were farmers.

Table 2

Utilization of Health Services according health facility, Visit, used and Stay

n=357

Characteristics	Frequency (f)	Percentage (%)
Visit Health in facility		
Yes	323	90.4
No	34	9.5
Types of health facility (n=323)		
Government Hospital	281	86.9
Private	21	6.5
Health Post	21	6.5
Causes of visit (n=323)		
Regular visit	18	5.5
Visit on problem arise	305	94.4
Visit with in health facility (n=323)		
Son and daughter in law	83	25.6
Daughter	207	64.0
Self and wife/ husband	33	10.2
Types of Service Used (n=323)		
Admitted in hospital	206	63.7
only OPD Services	117	36.2
Duration of hospital stay (n=323)		
Less than 24 hour	285	88.2
Less than 1 week	29	8.9
More than 1 week	9	2.7

Table 2 illustrated that most (90.7%) of the respondents were visited (utilized) health service facility. More than three fourth (78.9%) of the respondents were visited government hospital or health facility. Nearly three fifth (58.1%) of the respondents were visited with Daughter. Similarly more than half (57.9%) of the respondents were admitted in hospital.

Table 3

Utilization of Health Services according to distance, Transportation and insurance

n=323

Characteristics	Frequency (f)	Percentage (%)
Distance from health facility		
5 km or less	172	53.3
more than 5 km	151	46.7
	105	32.5
Transportation		
by foot		
by taxi	106	32.8
by bus	75	23.2
by city	37	11.45
Heard Insurance		
Yes	250	77.3
No	107	32.8
Perform Insurance service		
Yes	250	100.0
Types of Insurance (n=250)		
Government	250	100.0
Premium Rs. (n=250)		
2500	162	64.8
2500-3500	88	35.2
Health insurance service (n=250)		
Satisfied	190	76.0.
unsatisfied	60	24.0

Table 3 revealed that more than half of the respondents had 5 kilometers or less from the health facility. Likewise, most (94.8) of the respondents had done insurance service. Almost all (100%) of the respondents had done government insurance. More than third fourth (76.0%) of the respondents were satisfied with health insurance services.

Table 4

Common Health problem of elderly

n=357

Characteristics	Frequency (f)	Percentage (%)
Health Problem of Elderly		
Hypertension	157	44.0
depression Diabetes	78	21.8
Hypertension Difficulty in breathing	65	18.2
arthritis	38	10.6
Eye Problem	36	10.1

Dental problem	35	9.8
Heart disease	21	5.9
Gastritis	20	5.6
Hypothyroidism	14	3.9
Cholesterol	14	3.9
Depression	13	3.6
Gastritis	7	2.0
Anxiety	4	1.1
others	104	29.1

Table 4 revealed that that less than half (44.0%) of the respondents were hypertensive. Less than one-fourth (21.8%) of the respondents were diabetes. less than one fifth (18.2%) of the respondents were difficulty in breathing. Nearly eleventh percent (10.6%) of the respondents were arthritis. Nearly ten percent (9.8%) of the respondents' problem had dental problem. two percent of elderly had hypothyroidism.

Table 5

Association between Utilization of health services and demographic variables (Bi-variate analysis)

n=357

Variable	Utilization of Health services		Unadjusted OR	CI	p-Value
Age	Yes	No			
60-79	267	28	0.836	0.310-2.259	0.725
≥80	57	5			
Sex					
Male	154	14	0.815	0.395-1.680	0.579
Female	170	19			
Education					
Illiterate	153	12	1.560	0.742-3.277	0.241
Literate	171	21			
Religion					
Hindu	245	31	0.200	0.047-0.855	0.030*
Others	79	2			
Place of Residence					
Urban	161	19	0.728	0.353-1.501	0.390
Rural	163	14			
Marital status					
Married	239	26	0.757	0.317-1.808	0.531
others (Widow, single)	85	7			
Occupation					
Service	57	12	0.374	0.174-0.803	0.012*
Others	267	21			
Insurance Service					
Yes	235	15	40.927	9.595-174.576 *	>0.001

No	89	18			
Health Problem					
Hypertension					
Yes	147	10	2.019	1.010-4.036	0.047*
No	177	23			
Diabetes					
Yes	76	2	4.750	1.111-20.307	0.036*
No	248	31			
Difficulty in breathing					
yes	64	26	7.877	1.056-58.732	0.044*
	0				
No	1	32			
Heart disease					
Yes	19	2	0.966	0.215-4.341	0.964
No	305	31			

Table 5 bi-variate analysis revealed that association between utilization of health services and demo-graphical variables. There is association between utilization of health services and religion of the elderly people as Hindus are 0.200 times more utilize of health services than Buddhists and others religion. There is association between utilization of health services and occupation of the elderly people (p=0.012; Odd= 0.374; CI= 0.174-0.803). Elderly whose occupation is service 0.374 times more utilize health services than other occupation. There is association between utilization of health services and insurance services of the elderly people (p= >0.001; Odd=40.927 ; CI= 9.595-174.576). Elderly who had done health insurance 40.927 times more utilize than had not done health insurance. There is association between utilization of health services and health problem as hypertension (p=0.047; Odd= 2.019; CI= 1.010-4.036), diabetes (p=0.036; Odd= 4.750; CI=1.111-20.307) and difficulty in breathing (p=0.044; Odd =7.877; CI=1.056-58.732) respectively. Elderly who had health problem as hypertension 2*.019 times; diabetes 4.750 times and difficulty in breathing 7.877 times more utilize health services than no had health problem respectively.

Table 6

Association between Utilization of health services and demographic variables (Multivariate analysis)

n=357

Variables	Unadjusted OR	Adjusted OR	CI	p-value
Occupation				
Service	0.374	0.360	0.136-0.950	0.039*
non services				
Insurance service				
Yes	40.927	35.422	7.998-156.880	>0.001*
No				

(OR =Odd Ratio; CL= Confidence Interval 95%)

Table 6 depicts a multivariate analysis between the utilization of health services and demographic variables. There is association between utilization of health services and occupation (p=0. 039; Odd=0.360; CI=0.036-0.950). Elderly people who occupation has service (pension) 0.360 times more utilization of health services than non services. There is association between utilization of health services and insurance service (p=0.001, odd=35.422; 156.880). Elderly people who have done insurance service 35.422 times more utilization of health services than insurance service have not done.

This study assessed the factors affecting the utilization of health services among the elderly of Province 1. This study finding revealed that mean age of respondents were 70.89±8.35 and more than half (52.9%) of respondents were female whereas contradict finding by Safstrom et al., (2018) argued that patients mean age 82.5 (±6.8), as well as 49%, were women. Present study shows that less than half (43.69%) of the respondents were illiterate and nearly three fourth (74.5%) of respondents were married and 19.6% of respondents were widow whereas contract finding revealed that study conducted by Jiang et al., (2018) argued that only 28.7% had received no formal education and 75.8% were married, 21.6% were widowed. This might be the differences in socio-demographic variables and settings. This study finding revealed that mean age is 70.2±8.0 of elderly and similar finding had reported by a variety of preexisting circumstances for example hypertension (37.7%), gastritis (28.4%), asthma (25.4%), and arthritis (23.4%) reported in the past one year (Acharya et. al., 2019).

This study finding shows that more than half (52.5%) of the respondent's monthly income were Rs. 6000-10000 and less than half (44.0%) of the respondents were hypertensive, less than one-fourth (21.8%) of the respondents were diabetes, contradict finding show that a study conducted among 2000 elderly in China by Jiang et al., (2018) claims that the health services used by pension income level 1000-2000 RMB, source of income, poor self-reported health status, sensation disorders, feeling lonely and/or nervous, poor satisfaction with life, limitation to activities of daily living (ADLs), health status changing for the worse, and having a chronic disease as heart disease, cataracts, cerebro-vascular disease, and gastroenteritis were particularly more likely to use outpatient health services. This might be differences in the socio-demographic characteristics of respondents and setting of study.

Present study revealed that less than half (44.0%) of the respondents were hypertensive, ne-fourth (21.8%) diabetes, nearly eleventh percent (10.6%) of the respondents were arthritis, ten percent (10.1%) eye problem; 5.9% heart disease, nearly ten percent (9.8%) dental problem; 5.6% had gastritis, 1.1% anxiety one fourth & (29.1%) of the elderly complain of others problem contradictory finding study conducted by Adhikari & Rijal (2015) argued that less than one third (29.3%), of respondent were hypertension; (8.3%) diabetes mellitus; (24.8%) arthritis/joint pain; (19.0%) eye problems; (3.3%) hearing problems; (17.5%) oral health problems; (17.8%) digestive system problems; (11.0%) respiratory problems, (3.8%) heart disease; (5.3%) renal problem liver disease(3.0%), mental illness(5.75%), fracture (1.0%), Gynecological problems (7.3%) and problems related to male genital (6.3%).

This study finding revealed that most (90.7%) of the respondents visited (utilized) health service facilities whereas only (9.5%) were not utilized health facilities. More than three fourth (78.9%) of the respondents were visited government hospital or health facility whereas only 5.6% of the respondents were visited private hospital whereas contradict finding argued by Nat et al., (2021) the study conducted among 5319 participants, about three-fourth or 72.4% of participants visited private hospitals for their healthcare needs. Likewise another contradict finding by Pilger, et al., (2013) argued that most of the aged patients used public health services when they needed medical care (70.4%). Similarly, another study was conducted by Fernandez-Olano et al., (2006) contradicting findings that more than 74.5% in the last 3 months of which 59.4% were general practitioner visits, 18.4% were nursing staff, and 16.5% were specialist visits. Laboratory tests were performed in 39.2% and radiological examinations in 24.9%. Emergency visits accounted for 2.4%, and hospitalization, 2.9%. This might be the socio-demographic factors of the respondent. Similarly, according to the study conducted by Ghimire et al., (2022) less than one-fourth of participants were free of all eight chronic diseases. Diabetes, hypertension, heart disease, kidney disease, respiratory problem, gastritis, arthritis, and depression); 36% had one chronic condition and 41% had two or more. More than one third (37.7%) of participants had not visited a health facility in the earlier 12 months.

Likewise, other contradicting findings revealed that half of the patients had not visited any health care facility during the month prior to the hospital admission, and 79% of the patients visited the emergency room without a referral. One-third felt insecure after hospitalization and lacked knowledge of which health care provider to consult with and contact in the event of deterioration or complications (Safstrom et al., 2018). Present study findings revealed that more than three fourth (78.9%) of the respondents visited government hospitals or health facilities whereas only 5.6% of the respondents visited private hospitals. Furthermore, contradicting findings revealed that those living in rural areas with university education visited more the public primary services whereas wealthier individuals visited more the private practitioners Lahana et al., (2011).

This study finding bivariate analysis revealed an association between utilization of health services and demographical variables. There is association between utilization of health services and religion (p= 0.030; Odd= 0.200 ; CI= 0.047-0.855), occupation (p=0.012; Odd= 0.374; CI= 0.174-0.803); insurance services (p= 0.001; Odd= 40.927; CI=9.595-174.576), health problem as hypertension (p=0.047; Odd= 2.019; CI= 1.010-4.036), diabetes (p=0.036; Odd= 4.750; CI=1.111-20.307) and difficulty in breathing (p=0.044; Odd =7.877; CI=1.056-58.732) respectively. Contradictory findings by Awoke et al. (2017) reported that older age groups who had higher education and higher wealth were associated with the use of private outpatient healthcare services. Using public outpatient care facilities was associated with having health insurance. Respondents who had two or more chronic conditions were more likely to use public and private outpatient care than other facilities. Another study by Grustam et al, (2020) argued that a significant association between the use of specialist healthcare and the marital status, with widows/widowers using health services significantly less than the education and income, where

the highly educated subjects (OR = 1.86, 95% CI = 1.42–2.43) and those with the highest income per household member (OR = 1.42, 95% CI = 1.05–1.91) and in the best financial situation (OR = 1.98, 95% CI = 1.44–2.72) were more likely to use the specialist care. The type of settlement (urban vs non-urban) was not a significant factor in primary healthcare utilization, in contrast to specialist care, with significantly lower utilization in non-urban areas (OR = 0.71, 95% CI = 0.61–0.84).

A present study by multivariate analysis revealed that there is association between utilization of health services and religion; (p=0.029; Odd=0.167; CI=0.033-.833); occupation (p=0. 039; Odd=0.360; CI=0.036-0.950) & insurance service (p=0.001, odd=35.422; 156.880). Elderly who are Hindus 0.167 times more utilization of health services than others. Elderly people who occupy a service (pension) 0.360 times more utilization of health services than non services. Elderly people who have done insurance service 35.422 times more utilization of health services than insurance service have not done. Contradictory finding by Min Min Hlaing et al., (2020) there is associated between health service utilization with sex, health habit and diagnosed chronic disease were associated with health service utilization in bivariate analysis, multiple logistic regression results reported that physical exercise (odd ratios (AOR) = 3.02, 95% CI: 1.07–8.53], financial support of family [AOR = 2.77, 95% CI: 1.00–7.69], perceived transportation cost [AOR = 0.08, 95% CI: 0.01–0.54], accessibility to health care personnel [AOR = 0.14, 95% CI: 0.04–0.50], and perceived health status [AOR = 0.03, 95% CI: 0.01–0.09] were predictors of health service utilization. Contradictory by Awoke et al. (2017) reported that older age groups who had higher education and higher wealth were associated with the use of private outpatient healthcare services. Using public outpatient care facilities was associated with having health insurance. Respondents who had two or more chronic conditions were more likely to use public and private outpatient care than other facilities. Contradictory by Sanjel et al., (2012) argued that there is a significant association between the health services utilization and socio-demographic factors of the elderly as marital status, dependence on others for activities of daily living, the existence of chronic diseases, and the elderly already on medication.

Conclusion

The study concluded that more than two-thirds of the respondents were young old age. Nearly half of the elderly were female. Likewise, less than half of the elderly were illiterate. Less than half (48.1%) of the respondents were Brahmin/Chhetri most of the elderly were visited (utilized) health service facility. Almost of the respondents had done insurance service. Less than half of the respondents were hypertensive. Bivariate analysis revealed that association between utilization of health services and religion, occupation, religion, health insurance service and health problem of elderly. A multivariate analysis between the utilization of health services is higher service holder than non-service holder. The utilization health by elderly was higher who had health insurance than who had not insurance service. One thirds of the elderly still had not utilized health services so health awareness program on health insurance and service utilization were essential to the elderly for their access of services.

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References

Radwan, E., Radwan, A., & Radwan, W. (2020). Challenges facing older adults during the COVID-19 outbreak. *European Journal of Environment and Public Health*, *5*(1), em0059.

Acharya, S., Ghimire, S., Jeffers, E. M., & Shrestha, N. (2019). Health care utilization and health care expenditure of Nepali older adults. *Frontiers in Public Health*. https://doi.org/10.3389/fpubh.2019.00024

Adhikari, D., & Rijal, D. (2015). Factors Affecting Health Seeking Behavior of Senior Citizens of Dharan. *Journal of Nobel Medical College*. https://doi.org/10.3126/jonmc.v4i1.13304

Awoke, M. A., Negin, J., Moller, J., Farell, P., Alfred, E., Biritwum, R. B., Kowal, P., Ayenew, M., Negin, J., Moller, J., Farell, P., & Alfred, E. (2018). Predictors of public and private healthcare utilization and associated health system responsiveness among older adults in Ghana Predictors of public and private healthcare utilization and associated health system responsiveness among older adults in Ghana. *Global Health Action*, *10*(1). https://doi.org/10.1080/16549716.2017.1301723

Banerjee, A., Nikumb, V., & Thakur, R. (2013). Health Problems Among the Elderly: A Cross-Sectional Study. *Annals of Medical and Health Sciences Research*. https://doi.org/10.4103/2141-9248.109466.

Bayuo, J. (2017). Experiences with out-patient hospital service utilisation among older persons in the Asante Akyem North District- Ghana. *BMC Health Services Research*. https://doi.org/10.1186/s12913-017-2604-6

Chatterjee, C., Nayak, N. C., Mahakud, J., & Chatterjee, S. C. (2019). Factors affecting the choice of health care utilisation between private and public services among the elderly population in India. *International Journal of Health Planning and Management*. https://doi.org/10.1002/hpm.2686.

Central Bureau of Statistics. 2014. Population Projections for Nepal 2011 – 2031 (Government of Nepal National Planning Commission Secretariat Central Bureau of Statistics Kathmandu, Nepal August, 2014. https:/ /nada.cbs.gov.np/index.php/catalog/54.

Kathmandu, N. (2014). Central Bureau of Statistics. *Population (in million), 33*, 34-0.

Cotingting, C. T., Apal, Z. H. L., Franco, M. B. M., Lozano, P. N. M. G., Quion, E. M. C., Tang, C. S., & Cabigon, J. J. J. (2019). Examining determinants of health service utilisation among Filipino older people: A cross-sectional study. *Australasian Journal on Ageing*. https://doi.org/10.1111/ajag.12599

Daoust, J. F. (2020). Elderly people and responses to COVID-19 in 27 Countries. *PLoS ONE*, *15*(7), 1–13. https://doi.org/10.1371/journal.pone.0235590

Fernández-Olano, C., Hidalgo, J. D. L. T., Cerdá-Díaz, R., Requena-Gallego, M., Sánchez-Castaño, C., Urbistondo-Cascales, L., & Otero-Puime, A. (2006). Factors associated with health care utilization by the elderly in a public health care system. *Health Policy*. https:// doi.org/ 10.1016/ j. Healthpol.2005.02.005

Gong, C. H., Kendig, H., & He, X. (2016). Factors predicting health services use among older people in China: An analysis of the China Health and Retirement Longitudinal Study 2013. *BMC Health Services Research*. https://doi.org/10. 1186/s12913-016- 1307-8

Grustam, A., Vranes, A. J., Soldatovic, I., Stojicic, P., & Andersen, Z. J. (2020). Factors associated with utilization of primary and specialist healthcare services by elderly cardiovascular patients in the Republic of Serbia: A cross-sectional study from the national health survey 2013. *International Journal of Environmental Research and Public Health*. https://doi.org/10.3390/ijerph17072602

Grustam, A., Vranes, A. J., Soldatovic, I., Stojicic, P., & Andersen, Z. J. (2020). Factors associated with utilization of primary and specialist healthcare services by elderly cardiovascular patients in the Republic of Serbia: A cross-sectional study from the national health survey 2013. *International Journal of Environmental Research and Public Health*. https://doi.org/10.3390/ijerph17072602

Guo, C., Du, W., Hu, C., & Zheng, X. (2016). Prevalence and factors associated with healthcare service use among Chinese elderly with disabilities. *Journal of Public Health (United Kingdom)*. https://doi.org/10.1093/pubmed/fdv120

Gurung, L. B., Paudel, G., & Yadav, U. N. (2016). Health service utilization by elderly population in urban nepal: a cross-sectional study. *Journal of Manmohan Memorial Institute of Health Sciences, 2*, 27-36.

HelpAge International network members in Asia Pacific (2019). Aging Population in Nepal. Retrieved from https://ageingasia.org/ageing-population-nepal/

Indumathi, R., , A. A study on utilization of health care facilities among rural elderly in kanyakumari district.. from http://www.ijaema.com/ gallery/2-ijaema-november -4802.pdf.

Jiang, M., Yang, G., Fang, L., Wan, J., Yang, Y., & Id, Y. W. (2018). Factors associated with healthcare utilization among community-dwelling elderly in Shanghai , China. *PLoS ONE*,1–22.https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6277110/pdf/pone.0207646.pdf

Jiang, M., Yang, G., Fang, L., Wan, J., Yang, Y., & Wang, Y. (2018). Factors associated with healthcare utilization among community-dwelling elderly in Shanghai, China. *PLoS ONE*. https://doi.org/10.1371/journal.pone.0207646.

Lahana, E., Pappa, E. & Niakas, D. Do place of residence and ethnicity affect health services utilization? evidence from greece. Int J Equity Health 10, 16 (2011). https:// doi.org/ 10.1186/1475-9276-10-16.

Naz, L., Ghimire, U., & Zainab, A. (2021). Behavioral factors associated with utilization of healthcare services among elderly in Pakistan: evidence from a nationally representative survey. *BMC geriatrics*, *21*(1), 1-11.

Nouraei Motlagh, S., Sabermahani, A., Hadian, M., Lari, M. A. sad. Mahdavi, M. R. ez. V., & Abolghasem Gorji, H. (2015). Factors Affecting Health Care Utilization in Tehran. *Global Journal of Health Science*. https://doi.org/10.5539/gjhs.v7n6p240.

Min Min Hlaing, S., Clara, N., & Nanda Han, A. (2020). Factors influencing health service utilization among the elderly in Insein Township, Yangon Region. *Makara Journal of Health Research*, *24* (3), 10.

Pilger, C., Menon, MU, & Mathias, TADF (2013). Health services use among elderly people living in the community. *Revista de Escola de Enfermagem da USP* , *47* (1), 213-220.

Poudel, M., Ojha, A., Yadav, D. K., Sah, R. B., Chakravartty, A., & Ghimire, A. (2019). *Unmet health care needs of elderly residing on urban areas of Sunsari District, Nepal. A Cross Sectional Study*. 1–20. https://doi.org/10.21203/rs.2.18815/v1

Sanjel, S., Mudbhari, N., Risal, A., & Khanal, K. (2012). The utilization of health care services and their determinants among the elderly population of Dhulikhel Municipality. *Kathmandu University Medical Journal*. https://doi.org/10.3126/kumj.v10i1.6911.

Safstrom, E., Jaarsma, T., & Strömberg, A. (2018). Continuity and utilization of health and community care in elderly patients with heart failure before and after hospitalization. *BMC Geriatrics*. https://doi.org/10.1186/s12877-018-0861-9.

Shin, H., Song, H., Kim, J., & Probst, J. C. (2005). Insurance, acculturation, and health service utilization among Korean-Americans. *Journal of Immigrant Health*. https://doi.org/10.1007/s10903-005-2638-4

Terfa, Y. B., Germossa, G. N., Hailu, F. B., Feyisa, G. T., & Jeleta, F. T. (2019). Determinants of Health Care Utilization among the Elderly Population in Jimma Town, Oromia Region, Southwest Ethiopia. *Int Arch Nurs Health Care*, *5*, 131.

United Nation. (2019). World Population Ageing 2019: Highlights (ST/ESA/SER.A/430). Official. In *Economic and Social Affairs, Population Division*.

Vlachantoni, A. (2019). Unmet need for social care among older people. *Ageing and Society*. https://doi.org/10.1017/S0144686X17001118.

Yonas Biratu, T., Gugsa Nemera, G., Fikadu Balcha, H., Garuma Tolu, F., Fikru Tafese, J., & Shimelis Ololllo, S. (2019). Determinants of Health Care Utilization among the Elderly Population in Jimma Town, Oromia Region, Southwest Ethiopia. *International Archives of Nursing and Health Care*. https://doi.org/10.23937/2469-5823/1510131

World Health Organization (2006). WHO SAGE Survey Manual: The WHO Study on Global AGEing and Adult Health (SAGE). Geneva, World Health Organization.

World Health Organization (2018). Ageing and health. Retrieved from https:// www. Who. int/ news- room/fact-sheets/detail/ageing-and-health.