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DEMOGRAPHIC PERSPECTIVE OF SELF-REPORTED HEALTH OF SENIOR CITIZENS IN NEPAL

Abstract

The health of the elderly (senior Citizen) has become the growing concern as the ageing population increases. Self-reported health is widely used measure of health status through individual. The aim of this study is to identify the major demographic factors of self-reported health among the senior citizen in Nepal. In this study, demographic variables include; Age, sex, marital status, migration status, residence status (rural-urban), and ecological area. This study has utilized data from Nepal Ageing Survey (2015) which is the biggest survey on aging in Nepal till now. Binary Logistic Regression has been used to determine the association between demographic, and self-reported health of elderly. Odds Ratio (OR) is used as a measure of effect. The level of significance is set at 95 percent confidence interval with a p-value of 0.05. The study attempts to examine the role they play in the health status of the elderly (good or bad). The conclusion of the study found significant effect in the health status of the elderly based on age, sex, ecological regions, and settlement status. There is not found significant impact of marital status and migration status on health.

Keywords: Nepal Ageing Survey (2015), Elderly People, Self-Reported Health, Senior Citizens

INTRODUCTION

Ageing is ultimately a result of biological and demographic processes in every individual. Although there was not much discussion about ageing in the past, in recent decades, its discourse has begun especially from developed

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countries. This issue has also become significant in most developing countries, including Nepal. Therefore, demographers are compelled to study in-depth about the dimensions of ageing. As we enter the 21st century, longevity has proven to be a significant achievement for the human race, but on the other hand, it poses specific challenges in the social, economic, health, and cultural sectors to individuals, families, societies, and international communities, creating challenges in the demographic system itself. In this context, the present study attempts to examine the situation that has been created in Nepal's ageing population from a demographic perspective.

Aging is the largest trend of the 21st century and its use and importance is associated with every aspect of society. Every second around the world, two elderly people are celebrating their 60th birthday, and annually this number is approximately 580 million. In 2014, one out of every nine individuals worldwide was 60 years or older, but this ratio is expected to be one in five by 2050. Thus, by 2050, 20% of the total population will be aged 60 years or older. On the other hand, globally, family members traditionally provide care and support to the elderly, the need for which is increasing, but the rate is gradually decreasing. Looking at the average age of the world's population, between 2010 and 2015, the average age of people in developed countries was 75 years and in developing countries it was 68 years. By 2045–2050, the average life expectancy of newborns is projected to be 83 years in developed countries and 74 years in developing countries. In 2014, there were 868 million people aged 60 years or older, this number is expected to reach 2 billion by 2050, with the majority expected to live in developing countries (UN 2017).

The continuous increase in the elderly population poses challenges in terms of societal and institutional care for the elderly. Looking at the structure of Nepal's population, the average age is increasing and the birth rate is decreasing, with the proportion of elderly population continuously increasing. The population censuses of Nepal in 1991, 2001, 2011, and 2021 have shown that the proportion of the population aged 60 years or older was 4.6%, 6.5%, 8.1%, and 10.2% respectively. As the elderly population increases at nearly triple the rate of population growth, in Nepal, the elderly population presents both opportunities and challenges. The opportunity in this sense is to engage active elderly people in various sectors of economic activities, while the challenge is related to the health status of the aging life. Therefore, special efforts need to be made in the study to improve the health status and make the aging life meaningful.

In Nepal, the elderly is respected in society. This level of respect is due to the cultural values, ancient religions, cultures, and religious scriptures that are ingrained in society. According to the determination made by the Second International Conference on Ageing in Madrid in 2002, every government is supposed to develop the social security system and promote intergenerational solidarity and equality, encouraging multigenerational families to take care of the elderly. Nepal has created special provisions regarding the protection of the elderly population in the Senior Citizens Act 2006, the law of 2008, and the Constitution of Nepal 2015. Likewise, the international community has called upon governments, civil society, international bodies, academic communities, media, and the business sector to improve the lives of the elderly in society by designating 2020-2030 as the "Decade of Healthy Ageing." The declaration of 2030 and the Sustainable Development Goals (SDGs) need to be inclusive among all age groups. In this, every person is urged to create an environment to move forward, ensuring equality and dignity as much as possible. Thus, the right to health should be accessible to everyone without discrimination, but many health systems around the world are extremely complex and discriminatory, which often leaves the elderly mostly engaged with health needs. Keeping this context in mind, this research article attempts to shed light on some demographic issues that make a difference in the health of Nepal's elderly population.

PROBLEM

Ageing is the ultimate manifestation of biological and demographical activities in individual human beings in particular and the population in general. Because of rising life expectancy and falling fertility rates, the proportion of people over 60 is increasing faster than any other age group globally (Chalise 2019). The growth rate of ageing population in Nepal has reached 3.3 percent per year during the census period of 2011–2021 AD, this will double by 2042 (NSO 2023). While during this period, National population growth rate is 0.92% per year which is three and half-fold less than ageing population growth. The elderly population is steadily increasing worldwide. Nepal is no exception to this. The health lifestyle of the elderly determines their health status and helps to equate a long life with easy living. But the health condition of old age is seen as a common problem due to its continuous deterioration. The process of westernization and modernization in

Nepali society is accelerating. This has disrupted social and cultural values and norms, and occupational diversification is increasing from the agricultural system to non-agricultural systems. People are increasingly migrating in search of new jobs and education, leading to a shift from joint to nuclear families. As families become single and women take on new responsibilities, the risk of the elderly being left out of care, whether in rural or urban areas, is increasing. The lack of care, drastic changes in social and cultural values and norms, and the risk of the health status of the elderly becoming severe are increasing. Similarly, based on the most up-to-date projections, Nepal will transition to an "ageing society" (7% population age 65 and above) in 2028, just 11 years from 2017 and into an "aged society" (14 % population age 65 and above) by 2054, making the transition from "ageing" to "aged" in just 26 years (Amin et al. 2017). But it was reached 7% by 2021 (NSO 2023). This shows Nepal is entering ageing society in the mid of 2021. This number is predicted to double by 2054.

Many studies have also been conducted in Nepal to maintain good health in this regard, but since most of these studies are based on limited areas, and numbers. The conclusions drawn from them cannot be considered very reliable. The present study, based on the Nepal Ageing Survey (2015), which is representative of the whole Nepal, is determined on the basis that the findings obtained from it can be considered more reliable.

METHOD

The presented study is based on data from the Nepal Ageing Survey (2015). The survey, conducted by the Center for Social Science Studies Nepal with the support of the Nepalese Ministry of Population and Health, represented the national level and included a total of 7,200 households and the 8,626 citizens aged 60 and above residing in them. The survey asked questions regarding the health status of the respondents, which included options such as 'very good,' 'good,' 'fair,' 'poor' and 'very poor.'

In the present study, the responses regarding health status were binaries into 'good' and 'bad.' 'Very good' and 'good' were categorized as 'good,' while 'poor' and 'very poor' were categorized as 'bad.' 'Fair' was excluded from the study to avoid bias.

The study includes age, sex, marital status, geographical area, migration status, and settlement status as independent demographic variables.

The aim is to examine the role of these six independent demographic variables in determining the dependent variable of health status – whether it is good or bad. The study utilizes rates, ratios, percentages, cross tables, correlation, and binary logistic regression to determine the interrelationship and effects of demographic variables.

CROSS TAB-ANALYSIS

In the context of analyzing Nepal's elderly population from a demographic perspective, this section is based on the age, sex, marital status, ecological region, migration status, and settlement status of the elderly population. This study has been conducted based on the limited subjects mentioned on the basis of various studies that affect their mentioned status. According to this, each subject can be studied as follows (See: Table in Appendix).

HEALTH STATUS

The health status is divided into two levels (good or bad). The elderly age group is divided into three levels. Those three levels include the elderly population of 60–69, 70–79, and 80s. The total population saying health status is good or bad in the survey is only 4889. Of this, 59.8% said they were in good health and the remaining 40.2% mentioned their health was bad. The percentage of people within the age group who are in good health are respectively 69.8%, 49.5%, and 38.6%. So, as age increases, the number of people saying their health is decreased. Similarly, the proportion of those saying their health is bad is 30.2%, 50.6%, and 61.4%.

In the study, the ratio of the total elderly population is 48.3% women and 51.7% men. Of these, 65.5% of the total male population said they were in good health and the remaining 34.5% said their health was bad. Whereas, this figure for women is 53.7% and 46.3% respectively. Therefore, it appears that women's health status is worse than men's in Nepal.

Marital status is divided into four parts: unmarried, married, widow/widower, and separated/divorced. Out of the total 28 (0.6%) unmarried elderly population, 64.3% reported they are in good health and the remaining 35.7% have reported being in bad health. Similarly, out of the total

3026 (61%) married (currently living together), 64.4% reported being in good health and the remaining 35.6% reported being in bad health. The number is 1792 (36.6%) for widows/widowers, of which 51.7% say they are in good health and 48.3% say they are in bad health. Similarly, the total number of separated/divorced is only 43 (0.9%), of which 69.8% say they are in good health and 30.2% say they are in bad health. This shows that the proportion of those in good health is higher in every stage of marital status, but comparatively, the proportion of widows/widowers in good health is lower. Perhaps life becomes more difficult after separation, hence this situation. The proportion of those in good health is higher for the separated and unmarried. The number of people involved in this is also in small size, and it is also assumed that being unmarried and separated does not significantly affect health.

Nepal is divided into three regions according to geographical area: Terai, Hills, and Mountain. 62.8 percent of total population living in Terai, reported good health status, while 37.2 percent reported poor health. Excluding Kathmandu, Bhaktapur, and Lalitpur (KBL, or Kathmandu Valley) 58.8% of the population living in the Hills reported good health and 41.2% reported poor health. In the mountain, the figures are 54.4 percent and 45.6 percent, respectively. In KBL, the figures are 53.2 percent and 46.8 percent, respectively. According to the percentage of the elderly population, the Terai region has the highest percentage of good health status, whereas the least is seen in KBL.

There are 71.8 percent of the total surveyed populations who are living in rural whereas 28.2 percent are living in urban areas. Urban residents have better health conditions (62.4% good health conditions) than rural residents (58.8%). This is not very much different. Still, urban residents benefit from quick access to medical and health services which may positively impact their health condition.

People can be either live at a place from their birth or migrate to that place from other places. Among the survey population, residing in different places, 59.7 percent are living at their current residence from their birth and 40.3 percent are the ones who moved from somewhere else to current residents. Those who are living at their current place from their birth have a higher 61.9 percent of good health condition in comparison to those who migrated later to their current place with 56.8 percent. This hints that living at a place for such a long time makes the health to be slightly better than migrating from somewhere else.

CORRELATION ANALYSIS

Spearman's rho correlation statistical method was used to study the correlation between health status along with six other predictor variables. Based on the table the following correlation is observed (See: Appendix):

Health condition has a significant positive correlation with "age group" (0.245**), with "Sex" (0.121**), with "marital status" (0.118**), with "Ecological region" (0.067**), with "Migration" (0.051**), and with "Settlement" (0.033**).

Overall, these statistical findings suggest that there are significant associations between Health Condition filtered and the other variables mentioned in the table. The correlations indicate the strength and direction of these associations, with positive correlations indicating a tendency for higher values in one variable to be associated with higher values in the other variables.

LOGISTIC REGRESSION ANALYSIS WITH DEMOGRAPHIC VARIABLES

Binary logistic regression is used to determine the effects of demographic variables on the likelihood that respondent's health (dependent as good or bad) condition. A total of 4,889 cases are included in this analysis. Health condition is represented by values – good as 0 and bad as 1 (good "0" as our target category). Also, encoding of dependent variable and coding for categorical predictor variable is done. Categorical variables like ecological region, marital status, age group, migration status, settlement status with their respective reference variables are coded (see: Appendix).

The Wald test has been used to determine the statistical significance for each of the independent variables- age, sex, marital status, ecological regions, settlement status, and migration status. In this case the dependent variable represents two categories: "Good" (encoded as 0) and "Bad" (encoded as 1). The results indicate; Age category has 3 groups: 60–69, 70–79, 80+. The first dummy variable age constant contrasts '70–79 age group' by '60–69 age group elderly and the difference is significant ($B = 0.837$, s.e. = 0.068, $p = 0.000 < 0.05$). Also, exp (B) of 2.308 means that elderly of 60–69 age group is 2.308 times or more likely to be in good health

condition than 70–79 age group, having allowed for other / predictor variables. The second dummy variable age constant contrasts '80+ age group' by '60-69 age group' elderly and the difference is significant (B = 1.248, s.e. = 0.098, p = 0.000 < 0.05). Also, exp (B) of 3.482 means that an elderly person who is 60-69 age group is 3.482 times or more likely to be in good health condition than 80+ age group, having allowed for other predictor variables.

Sex has been classified as male and female, and sex is a positive and significant (B = 0.450, s.e. = 0.067, p = .000) predictor of health conditions. Male is taken as reference group. The Odds Ratio (OR) = 1.569 indicates that for every unit increment on this predictor, the odds of being in good health condition increase by a factor of 1.569 which means that odds of target health condition are increasing while move from female to male. This means the female is likely not to have a good health condition in comparison to men.

Marital Status has been classified into 4 groups: unmarried, married, widow/er and divorced/separated. The first dummy variable is the comparison of married and unmarried. The difference is positive and not significant (B = 0.232, s.e. = .409, p = .571 > 0.05). The second dummy variable is the comparison of Widow/er (coded 2 on the variable) and Unmarried. Here also, the difference is positive and not significant (B = 0.365, s.e. = .374, p = .374 > 0.05). The third dummy variable is the comparison of Divorced (coded 3 on the variable) and Unmarried (Reference category coded 0). Difference is negative but not significant (B = -0.064, s.e. = .532, p = .904 > 0.05). Therefore, conclude that marital status does not indicate much significance to health conditions.

Ecological Region (ER) has been classified into 4 groups: Terai, Hill without Kathmandu valley (KBL), Mountain, and Kathmandu valley. The first dummy variable is the comparison of Terai (coded 1 on the variable) and Kathmandu valley (Reference category coded 0). The difference is positive and significant too (B = -.295, s.e. = .106, p = 0.005 < 0.05). Kathmandu valley inhabitants are 0.744 times less likely to be in good health condition than that of the Terai region. That means Terai region elderly are (1/0.744) = 1.344 times more likely to be in good health condition. The second dummy variable is comparison of Hill w/o Kathmandu valley (coded 2 on the variable) and Kathmandu valley. Here also, the difference is negative and not significant (B = -.155, s.e. = 0.113, p = 0.171 > 0.05). The third dummy variable (coded 3 on the variable) is the comparison of Mountain and

Kathmandu valley. Difference is negative and not significant (B = -0.013, s.e. = .150, p = .838 > 0.05). The only significant result that came out from here is that Terai inhabitants' elderly are 1.344 times more likely to be in good health condition than that of the Kathmandu valley region.

Rural/Urban (VDC/NP) or settlement status is a positive and significant (B = 0.222, s.e. = 0.071, p = 0.002 < 0.05) predictor of health condition, with Odd Ratio (OR)indicating that for every one-unit increase on this predictor the odds of good health increase by just 1.248. This means those living in Urban are just 1. 248 times more likely to be in good health condition in comparison to those who live in rural.

Migration status with possible answers "By birth" and "Came later." Migration is a positive and not significant (B = 0.104, s.e. = 0.070, p = 0.136 > 0.05) predictor of health condition. This indicates migration status is not significant predictor of health condition of elderly.

FINDINGS

The correlation of age, sex, marital status, ecological regions, settlement status, and migration status are interrelated with health status (dichotomous variable). Each variable's p-value is found < 0.05. So, there is a significant relationship between health status and each demographic variable.

On the other hand, the regression table shows age and sex are as the most significant predictor variables. Higher in the age group, less likely to be in good health condition is found. Male are more likely to be in good health condition than females. Marital status is not significant. Among ecological regions, when the Kathmandu Valley is taken as a reference category, the only significant difference is observed between Terai and Kathmandu valley's elderly people. The Terai elderly are found to be slightly more likely to be in good health condition than Kathmandu valley elderly. Ecologically diverse environments may evoke positive emotions and promote relaxation, which can contribute to better self-rated health status.

Those living in Urban are just 1.248 times more likely to be in good health condition than those who live in rural. Migration status is not significant predictor of health condition of elderly.

RESULTS AND DISCUSSION

The result shows that an increase in age tends to less likely to be good health condition. Age is seen here as a significant positive predictor of self-reported health. The biological theories also support the argument. A similar study in Thailand found old age to be positively associated with poor health (Haseen et al. 2010) due to decline in mobility and activities. This study also finds that female is less likely to have a good health condition than males. In Nepal, females are less likely to have good health status than males (Sharma 2023).

A study in Ghana found that age was statistically related to SRH (Self-Rated Health) and the highest proportion (83%) of respondents reporting good health were the young old while the oldest old reported poor health more (36%). In other words, reporting good health declined from 83 to 64% as age increased while poor health increased with age, from 17 to 36%. Most males (84%) were seen to report good health compared to 71% of females. On the other hand, 26% of females reported poor health while only 18% of males reported poor health. A high proportion of elderly persons (82%) who were married reported good health while poor health was reported most (26%) by the widowed. Regional residence in Eastern and Western regions of Ghana have been shown to be significantly associated with SRH (Fonta et al. 2017).

Similar previous study demonstrated that women were more likely to report poor self-reported health status and to have a higher prevalence and incidence of disability compared with men at older age (Hosseinpoor et al. 2012).

A study in Nepal reveals that settlement pattern does not significantly impact the elderly health status in the process of final model setting (Sharma 2023).

Migration status of elderly have not found any significant impact on health status of elderly in Nepal. Results of the multi-level multivariate analysis also show a negative association between number of years of migration experience and self-rated health, and a positive association between migration and functional difficulty. These findings suggest a negative relationship between migration experience and later life health (Ghimire & Bhandari 2020).

Married people were more likely to practice positive health behaviours (such as exercise and eating breakfast) and less likely to engage in negative

ones (such as smoking or drinking heavily) than the other groups (Joung et al. 1995). But in our study the relationship between self-reported health and marital status is found insignificant.

CONCLUSION AND DISCUSSION ON POLICY RESPONSES

In conclusion, it seems necessary to pay special attention to the fact that health status is increasingly deteriorating as the age group increases. Females are less likely to have good health status than males. There is not found significant impact of marital status on health. There are four ecological regions. Only Terai region's elderly have significant effect on health compare to Kathmandu valley. This may be the reason that most of the elderly residing in Kathmandu Valley were older than the Terai residing elderly. It is already known that the older you are, the poorer your health status will be. Those elderly who are living in urban areas have more likely to be good health condition than rural living. Migration status of elderly have not found significant impact on health status.

As age increases the health status decreases, so effective separate elderly age group policies are needed to address the elderly people of Nepal. Male elderly is to be more likely to be in good health condition than female where most of the proportion has occupied by widows compared to widowers so policy should be strengthening to reducing loneliness of female. There is higher median age at marriage of males (21 years) than females (18 years) (NSO 2023). So the age at marriage difference should be reduced. Rural residing elderly health facility should be increased compare to urban. The Migration status of the elderly has not been found significant impact on the elderly so elderly should be responded as their interest of living residence.

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APPENDIX

Distribution of elderly by the condition of health and age group

Age Group	Good (%)	Bad (%)	Total (N)	Total (%)
60-69	69.8	30.2	2817	57.6
70-79	49.4	50.6	1486	30.4
80+	38.6	61.4	586	12.0
Total	59.8	40.2	4889	100.0

Source: Nepal Ageing Survey (2015)

Distribution of elderly by the condition of health and sex

Sex	Good (%)	Bad (%)	Total (N)	Total (%)
Male	65.6	34.4	2529	51.7
Female	53.7	46.3	2360	48.3
Total	59.8	40.2	4889	100.0

Source: Nepal Ageing Survey (2015)

Distribution of elderly by condition of health and marital status

Marital status	Good (%)	Bad (%)	Total (N)	Total (%)
Unmarried	64.3	35.7	28	0.6
Married	64.4	35.6	3026	61.9
Widow/er	51.7	48.3	1792	36.6
Divorced/separated	69.8	30.2	43	0.9
Total	59.8	40.2	4889	100.0

Source: Nepal Ageing Survey (2015)

Distribution of elderly by the condition of health and ecological region

Ecological region	Good (%)	Bad (%)	Total (N)	Total (%)
Terai	62.8	37.2	2354	48.1
Hill w/o KBL	58.8	41.2	1675	34.3
Mountain	54.4	45.6	366	7.5
KBL	53.2	46.8	494	10.1
Total	59.8	40.2	4889	100.0

Source: Nepal Ageing Survey (2015)

Distribution of elderly health by rural/urban settlement status

Settlement	Good (%)	Not Good (%)	Total (N)	Total (%)
Urban	62.4	37.6	1378	28.2
Rural	58.8	41.2	3511	71.8
Total	59.8	40.2	4889	100.0

Source: Nepal Ageing Survey (2015)

Distribution of elderly health by migration status

Migration Status	Good (%)	Not Good (%)	Total (N)	Total (%)
By birth	61.9	38.1	2919	59.7
Came later	56.8	43.2	1970	40.3
Total	59.8	40.2	4889	100.0

Source: Nepal Ageing Survey (2015)

Non-parametric Correlations Output

Spearman's rho		HD01 Health Condition filtered
HD01 Health Condition filtered	Correlation Coefficient	1.000
	Sig. (1-tailed)	.
	N	4889
Age Group	Correlation Coefficient	.245**
	Sig. (1-tailed)	.000
	N	4889
SD01. Sex	Correlation Coefficient	.121**
	Sig. (1-tailed)	.000
	N	4889
SD08. Marital status	Correlation Coefficient	.118**
	Sig. (1-tailed)	.000
	N	4889
Ecological region	Correlation Coefficient	.067**
	Sig. (1-tailed)	.000
	N	4889
Migration Status	Correlation Coefficient	.051**
	Sig. (1-tailed)	.000
	N	4889
Settlement Status	Correlation Coefficient	.033*
	Sig. (1-tailed)	.000
	N	4889

** Correlation is significant at the 0.01 level (1-tailed)
* Correlation is significant at the 0.05 level (1-tailed)

Logistic Regression Analysis Output

Variable		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1a	Agecat (Reference variable)			239.393	2	.000			
	Age cat (1) 70-79	.837	.068	150.821	1	.000	2.308	2.020	2.638
	Agecat (2) 80+	1.248	.098	160.664	1	.000	3.482	2.871	4.223
	Sex status sex q05_sd01	.450	.067	45.197	1	.000	1.569	1.376	1.789
	Marital status q05_sd08 (Reference variable)			5.288	3	.152			
	Married q05_sd08(1)	.232	.409	.321	1	.571	1.261	.566	2.811
	Widower q05_sd08(2)	.365	.410	.791	1	.374	1.441	.644	3.221
	Divorced q05_sd08(3)	-.064	.532	.015	1	.904	.938	.330	2.660
	ER (Ecological Region)			12.420	3	.006			
	Hill without KBL(ER(1))	-.295	.106	7.736	1	.005	.744	.604	.916
	Mountain (ER(2))	-.155	.113	1.872	1	.171	.856	.685	1.069
	KBL(ER(3))	-.013	.150	.007	1	.932	.987	.736	1.324
	settlement urban rural q04_si05	.222	.071	9.693	1	.002	1.248	1.086	1.435
	Migration status: By Birth or come latter(q10_sr01)	.104	.070	2.222	1	.136	1.110	.968	1.274
	Constant	-2.002	.443	20.405	1	.000	.135		

a. Variable(s) entered on step 1: Agecat, q05_sd01, q05_sd08, ER, q04_si05, q10_sr01.
b. Dependent variable: Health Status; Good or Bad.

BIBLIOGRAPHY

Amin, S., Bajracharya, A., Bongaarts, J., Chau, M., & Melnikas, A. J. 2017. *Demographic Changes of Nepal: Trends and Policy Implications. Final Report*. Kathmandu: National Planning Commission, Government of Nepal.

Chalise, H. N. 2019. Aging: Basic Concept, *American Journal of Biomedical Science and Research*, 1(1), 8–10. https://doi.org/10.34297/AJBSR.2019.01.000503.

Fonta, C. L., Nonvignon, J., Aikins, M., Nwosu, E., & Aryeetey, G. C. 2017. Predictors of Self-Reported Health among the Elderly in Ghana: A Cross Sectional Study, *BMC Geriatrics*, 17, 1–15, https://doi.org/10.1186/s12877-017-0560-y.

Ghimire, D., & Bhandari, P. 2020. Study of Migration and Later Life Health in Nepal, *Journal of Migration and Health*, 1–2, 1–10, https://doi.org/10.1016/j.jmh.2020.100018.

Haseen, F., Adhikari, R., & Soonthorndhada, K. 2010. Self-Assessed Health among Thai Elderly, *BMC Geriatrics*, 10, 1–9, https://doi .org/ 10.1186/1471-2318-10-30.

Hosseinpoor, A. R., Stewart Williams, J., Jann, B., Kowal, P., Officer, A., Posarac, A., & Chatterji, S. 2012. Social Determinants of Sex Differences in Disability among Older Adults: A Multi-Country Decomposition Analysis Using the World Health Survey, *International Journal for Equity in Health*, 11, https://doi.org/10.1186/1475-9276-11-52.

Joung, I. M., Stronks, K., van de Mheen, H., & Mackenbach, J. P. 1995. Health Behaviours Explain Part of the Differences in Self Reported Health Associated with Partner/Marital Status in The Netherlands, *Journal of Epidemiology & Community Health*, 49(5), 482–488, https://doi.org/10.1136/jech.49.5.482.

National Statistical Office (NSO). 2023. National Census 2021, Brief Result, Government of nepaloffice of the Prime Minister and Council of Minister, Singhadurbar, Kathmandu. Retrieved from https://opendatanepal.com/dataset/preliminary-data-of-national-population-and-housing-census-2021.

Nepal Ageing Survey. 2015. *Results from Nepal Ageing Survey Data 2015*. Conduted by Central for social sciences studies, Nepal for the purpose of Nepal's Government, Population and Health Ministry, Kathmandu.

Sharma, M. 2023. Determinations of Self-Reported Health of Elderly People in Nepal, *The Asian Conference on Aging & Gerontology 2023: Official Conference Proceedings*, https://doi.org/10.22492/issn.2432-4183.2023.5.

United Nations (UN). 2017. *The Revision: Highlights*. Department of Economic and Social Affairs, Population Division. World Urbanization Prospects.