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Factors Associated with Common Health Problems of the Ageing Population in a Rural Municipality: A Cross-sectional Study

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Abstract:
Introduction: With increase in life expectancy, gradual rise in number of aging populations is expected in near future. With multiple studies concerned either with younger or sick population, the age group of 40-60 years who are most likely to have change in social roles, exposure to risk factors and increased mental burden are neglected. The study identifies multiple of these health problems and factors associated with the age group and possible recommendations for the concerned authority.

Methods and Materials: A community based cross sectional study was conducted in Bhangaha Municipality of Mahottari district of Nepal with a sample size of 230 people in the age group of 40-60 years irrespective of gender. Face to face interview using a structured questionnaire was conducted with participant after informed verbal consent was received. The data collected were analyzed through SPSS ver.20. Association between socio-demographic structure and health problems were studied.

Results: Eye problem (52.6%) was the most common health problem of the participants followed by Gastrointestinal problems (36.1%) and Musculoskeletal problems (31.7%). Significant association between age and eye problems was found but no such relationship was found between type of food and gastrointestinal problems. Type of family was strongly associated with irritability in the respondents.

Conclusion: With exposure to multiple risk factors in the age group of 40-60 years, multiple health problems are encountered by the age group. Promotion of healthy practices and screening is the need for reduction of these issues.

Keywords
Ageing, Community, Health problem, Rural municipality

INTRODUCTION

As per WHO, "By 2030, 1 in 6 people in the world will be aged 60 years or over. At this time the share of the population aged 60 years and over will increase from 1 billion in 2020 to 1.4 billion. By 2050, the world's population of people aged 60 years and older will double (2.1 billion)."[1] Many people over the age of forty experience symptoms associated with aging, including but not limited to changing family and social roles, decreased physical activity, and increased mental burden. Increased risk of cardiovascular disease, diabetes, cancer, and other chronic diseases is evident[2,3]. Females in particular have several short to long-term risk symptoms, mostly attributed to menopausal transition[4]. Though major concerns regarding the elderly have been evident in Nepal, including programs like; *Jyestha Nagarik Swasthhya Upachar Nirdeshika* 2061(Senior Citizen Treatment Guidelines) and yearly updates in the Budget concerning old age, no concern regarding the age group 40-60 years has been raised. It is evident that many within this age group have a shift of responsibility, and increased exposure to stressors; physical, mental, and/or social. National policies have more concern about solving the effect rather than the cause, which has a significant effect in the national economy and development.

The life expectancy of a developing country like Nepal is increasing due to advanced development and technology. The death rate is decreasing. Discoveries in medical science and improved social conditions during the past decades have increased the life span of man. The expectation of life at birth in developed countries is over 70 years[5]. The structure of the population in developed countries has so evolved that the numbers of people aged 40 to 60, as well as elderly people, are continually increasing. In 2002, there were an estimated 605 million 40- to 60-year-olds in the world, of which 400 million are living in low-income countries. It is expected that by 2025, the number of people aged 40 to 60 will rise to more than 1.2 billion, with about 840 million of these in low-income countries. As a result, the portion of the 40- to 60-year-old population (middle- to old-age group) is increasing. This period of age is the beginning period for the elderly. In this period of age, generally, people of this age group are active towards their responsibilities. Family, social, cultural, and economic burdens are high in this period of age. Most of the time in this age group is spent doing outdoor work. So health problems in this age group may be different and specific. A large number of studies have been conducted to find out about geriatric problems, and most of these problems have been discussed on the basis of their causes and affecting factors. Just before the geriatric period, if the health status of this age group is assessed and the health problems are identified, preventive measures can be applied more easily. But in the context of Nepal, no research, study, or survey has been conducted to find out the health problems of this age group. The research reveals the common health problems and their causing factors. The findings of this research will be helpful to the planners and administrators of the concerned organization to plan and launch a supportive program for this age group.

MATERIALS AND METHODS

Study design and setting

A community-based cross-sectional study design was developed to find out the factors associated with health problems among the aging population in Meghanath Gorhanna Village Development Committee (Now Bhangaha Municipality), Mahottari District, Nepal. The period of the study was from 1 July to 30 Sep 2013.

Participants, sampling and sample size

Permanent residents of Meghanath Gorhanna VDC, aged 40–60, were the study's participants. A multistage sampling technique was adopted to carry out the study to represent the population of the VDC. The district and VDC were selected by using the purposive sampling technique. There were 9 wards in the VDC. Respondents were selected proportionately. In every ward of these VDCs, approximately 500 populations belong to the age group of 40 to 6 years. 6% of respondents were selected from each ward of VDCs proportionately. To get the respondent, the first respondent from each ward was selected by the pencil-pointing method. The rest of them were selected by using the snowball technique until the required sample size was achieved. The calculated sample size was 230 for this study.

Statistical consideration

Data were collected by visiting the community using a structured questionnaire and a face-to-face interview technique. Before conducting research, approval was obtained from concerned authorities, i.e., the district health office and the VDC office. Verbal Informed Consent was obtained from each respondent before collecting the information. The collected data was checked for completeness, entered, and analyzed using SPSS version 20. The results were interpreted in terms of frequency of response and percentage. A chi-square test was applied to find out the associated factors.

RESULTS

The general profile of the study participants is shown in Table 1. According to the study findings, the total number of participants was 230, with 52.17 percent male and 47.83 percent female. The highest number of respondents (26.01%) falls in the age group 40–45 years and the least in the age group 51–55 years. According to the prospective religion, the majority of the people

believe in Hinduism (70%), followed by 25.6% of Buddhists and very few (0.9%) of Muslims. Likewise, the cast distribution of the respondents reveals that the majority, 45.23 percent, were from the general cast

(Braman, Chhetri, and Thakuri) and at least 12.14 percent from the backward cast.

Table 1| General profile of the respondents (n =230)	
Category	**Number (%)**
Sex	
Male	120 (52.17)
Female	110 (47.83)
Age	
40-45 years	60 (26.1)
46-50 years	58 (25.2)
51-55 years	55 (23.9)
56-60 years	57 (24.8)
Religion	
Hindu	116 (70)
Buddhist	59 (25.6)
Christian	8 (3.5)
Muslim	2 (0.9)
Caste	
Schedule caste	28 (12.2)
General	104 (45.2)
Backward	18 (7.8)
Schedule Tribe	80 (34.8)
Occupation	
House maker	86 (37.4)
Farmer	53 (23)
Business	45 (19.6)
Service	46 (20)
Education	
Illiterate	43 (18.7)
Primary level	96 (41.7)
Secondary level	68 (29.6)
Higher secondary level	14 (6.1)
Graduate level	9 (3.9)

Family type (Table 1|contd..)	
Joint	148 (64.3)
Nuclear	82 (35.7)
Marital status	
Married	212 (92.2)
Divorced	2 (0.9)
Widow	16 (7)
Height	
140-149cm	18 (7.8)
150-159cm	89 (38.7)
160-169cm	114 (49.6)
170-179cm	9 (3.9)
Weight	
40-50kg	7 (3)
51-60kg	52 (22.2)
61-70kg	102 (44.3)
71-80kg	70 (30.4)
House type	
Kachhi	16 (7)
Pucca	157 (68.3)
Semi pucca	56 (24.3)
Others	1 (0.4)
Head of the family	
Self	130 (56.5)
Son	14 (6.1)
Husband	86 (37.4)
Family monthly income	
>2400 NPR	215 (93.5)
1200-2390 NPR	13 (5.7)
904-1199 NPR	1 (0.4)
600-903 NPR	1 (0.4)

The occupational profile of the respondents shows that the majority of 86 (37.4%) respondents were housewives, and the least number of 45 (19.6%) respondents were involved in business according to their occupation. Similarly, the educational level of the respondents shows that most 96 (41.7%) of respondents were at the primary level; only 9 (3.9%) respondents had education up to graduation. About two-thirds of respondents (64.3%) belong to the joint family, while about one-third (82, 35.7%) belong to the nuclear family. Most of the respondents, 212 (92.2%), were married, while a few of them, 2 (0.9%), were divorced. The information is shown in Table 1.

Table 1: Height of the respondents measured shows that about a half 114 (49.6%) of the respondents belongs to height group 160-169cm, few 9 (3.9%) comes in height group 170-179 cm. It was measured that 102 (44.3%) respondents were in 61-70 kg weight group, and 7 (3.0%)

respondents were in 40-50 kg weight group. Similarly, more than half 157 (68.3%) of respondents has *a Pucca* house, and 16 (7.0%) have a *Kachhi* house. Regarding the head of the family, little more than half 130 (56.5%) of the respondents were themselves as head of the family, and the least 6.02% were their son as head of the family. Income level of the family in a month shows that in this study, most 215 (93.5%) of the family have a monthly income of NPR>2400 and at least 1 (0.4%) and 1 (0.4%) respondent have NPR 904-1199, 600-903 respectively. In the health problems of the respondents shown in Table 2, half 121 (52.6%) of the respondents suffered from eye problems, 83 (36.1%) had gastrointestinal problems, 73 (31.7%) had musculo-skeletal problems, and a few were experiencing 3 (1.3%) neurosensory deafness. Likewise, psychological problems experienced by the respondents are shown in Table 2.

Table 2|Health problems of the respondents

Health problem	Number (%)
General health profile as reported by the respondents	
Eye problem	121 (52.6)
Gastrointestinal problem	83 (36.1)
Musculoskeletal problem	73 (31.7)
Arthritis	53 (23)
Skin disease	43 (18.7)
Sleep disturbance	42 (18.3)
Allergic rashes	31 (13.5)
Diabetes	29 (12.6)
Oral problem	23 (10)
Hypertension	16 (7)
Backache	10 (4.3)
Tonsillitis	8 (3.5)
Neurosensory deafness	3 (1.3)
Psychological problems as reported by the respondents	
Mood	2 (0.9)
Irritability	17 (7.4)
Feeling of Weakness	8 (3.5)
Feeling of sadness	14 (6.1)
Worry	4 (1.7)
Anxiety	16 (7)
Loss of interest	2 (0.9)

Only 17 (7.4%) respondents suffered from irritability, 16 (7%) suffered from anxiety, and at least 2 (0.9%) respondents faced mood swings.

Table 3 shows the information related to personal habits. Regarding the associated factors, which were dug out in this study, it was revealed that near to half (41.3%) of respondents used to smoke smoked tobacco, 26 (11.3%) consumed chewed tobacco, and a few (0.9%) used to drink alcohol. Nearly half hadn't developed any addiction to substances. More than three-fourths 183 (79.6%) of respondents took daily baths, 42 (18.3%) took alternative days, and a few (5.2%) took it twice a week. About 105 (45.7%) of the respondents were doing physical exercise, 78 (33.9%) were active in doing yoga, and 47 (20.4%) were spending their sedentary lives not doing any exercise. Likewise, nearly two-thirds (157, or 68.3%) of respondents reported themselves as non-vegetarian whereas 73 (31.7%) reported being vegetarian. Nearly half (111, or 48.3%) of respondents have had three meals, 79 (34.3%) have had four meals, and 40 (17.4%) have consumed two meals per day. Similarly, 88 (38.3%) respondents have taken free from spicy and fried food, and an equal number (71, 30.9%) of respondents consumed spicy and fried food and free

Table 3| Information related personal habits

Factors		Number (%)
Type of substances abused	Alcohol	2 (0.9)
	Smoking	95 (41.3)
	Tobacco chewing	26 (11.3)
	No addiction	107 (46.5)
Bathing habits	Daily	183 (79.6)
	Alternative day	42 (18.3)
	Twice a week	5 (2.2)
Exercise habit	No exercise at all	47 (20.4)
	Physical exercise	105 (45.7)
	Yoga	78 (33.9)
Dietary pattern	Vegetarian	73 (31.7)
	Non-Vegetarian	157 (68.3)
Number of meals in a day	Two times	40 (17.4)
	Three times	111 (48.3)
	Four times	79 (34.3)
Type of food eaten	Spicy	71 (30.9)
	Spicy and fried	71 (30.9)
	Free from spicy and fried	88 (38.3)
Fasting frequency in a week	One time	53 (23.5)
	Two times	2 (0.9)
	Not at all	174 (75.7)
Water purification methods	Boiling	97 (42.2)
	Chlorination	12 (5.2)
	Filtration	57 (24.8)
	Not at all	64 (27.8)
Consumption of street fast food	Most of time	5 (2.1)
	occasionally	151 (65.7)
	Never	74 (32.2)
Distance of the health facility from home	1-3km	33 (14.3)
	3-5 km	55 (22.2)
	5 km	146 (63.5)
Type of transportation using	Personal	27 (11.7)
	Public	203 (88.3)
Having regular health check up	Yes	18 (7.8)
	No	212 (92.2)
Number of hospital admissions in last 2 years	One time	88 (38.8)
	Two time	13 (5.7)
	Three times	1 (0.4)
	Never ever	128 (55.6)
Length of hospital stay in last 2 years	Less than 1 week	93 (40)
	1 to 3 weeks	6 (2.6)
	Never	131 (57)
Seeking the treatment methods	Traditional healer	8 (3.5)
	Hospital	35 (15.2)
	PHC/HP/SHP	85 (37)
	Private clinic	102 (44.3)

from spicy food, respectively. The study revealed that two-thirds (75.7%) of respondents do not have fasting habits, 54 (23.5%) have one-time fasting habits in a

week, and a few (0.9%) have two-timed fasting habits. Among the water purification methods in households, 97 (42.2%) used the boil method for drinking water purification, 64 (27.8%) never consume water by using any purification methods, 57 (24.8%) use filtrate, and 12 (5.2%) do chlorination in water before drinking. Similarly, the study found that the majority of respondents, 151 (65.7%), took street food occasionally, 74 (32.2%) never took any street food, and 5 (2.1%) took street food most of the time. Furthermore, the study attempted to discover the health seeking pattern, which reveals that the distance of the health facility from the respondents' homes reported 146 (63%) of them travel more than five kilometers. Likewise, 51 (22.2%) have to travel 3-5 km, and 33 (14.3%) travel 1-3 km. According to the study, the most commonly used means of transportation is public transportation, with 203 (88.3%), whereas only 27 (11.7%) used personal vehicles for transportation purposes. Surprisingly, the majority of them, 212 (92.2%), do not check their health regularly; only a few, 18 (7.8%), used to do regular health checkups. About the number of hospital admissions in the last two years, more than half (128 (55.6%) were not hospitalized, while 88 (38.3%) were admitted to a hospital once, 13 (5.7%) twice, and 1 (0.4%) three times. Likewise, the length of hospital stay in the last two years reported that mostly 131 respondents were not hospitalized at all, 46 stayed less than a week, and only three of them stayed for one to three weeks. In terms of treatment seeking pattern, it shows that most 102 (44.3%) respondents go to the private clinic for their health checkup, 85 (37.0%) respondents go to PHC/HP/SHP, 35 (15.2%) respondents go to the hospital, and few of them (8.5%) believe in traditional healers for their health checkup. The bivariate analysis, from the chi-square test, shows the association between the general profile and the associated factors of common health problems among the ageing people presented in Table 4. There is a significant relationship shown between the age of the respondents and the eye problem (p = 0.05); however, there is no association between types of food consumption and gastrointestinal problems (p = 1.93). Likewise, the study reveals that there is no association between marital status and the anxiety problem (p = 2.91); moreover, the association between physical exercise and hypertension has no association (p = 0.7). Additionally, the study found a strong association between types of families and the irritability problem of the respondent (p = 0.01).

DISCUSSION

The study explores the multitude of factors of health problems, including substance abuse, cleanliness, exercise, diet, drinking water, and health-seeking behavior in the population of 40-60 years. The study reveals that various health problems are incurred by the

Table 4	Association between general profile and associated factors		
Characteristics	**Problems**		**P- value**
Age	Yes	No	
	Eye problem		
40-45	14	46	
46-50	26	32	0.05
51-55	33	22	
56-60	48	9	
Type of food	**Gastrointestinal**		
Spicy	57	44	
Spicy and fried	29	42	1.93
Free from spicy and fried	27	61	
Marital Status	**Anxiety problem**		
Married	15	197	
Divorced	0	2	2.91
Widow	1	15	
Physical exercise	**Hypertension**		
Not at all	3	44	
Physical exercise	6	99	0.76
Yoga	7	71	
Type of the family	**Irritability**		
Joint	11	137	0.01
Nuclear	6	76	

people of Bhangaha Municipality, consistent with the fact that the population may suffer from health problems past 60 years of age. Eye problems, gastrointestinal problems, and musculoskeletal problems which are consistently prevalent in the population also predict the fact that post 60 aged people will be affected by these diseases. Studies conducted have shown proof that many post-60 either had these problems in the past or are currently suffering from them[6,7]. It can also be noted that more than half of the population has some sort of substance abuse, much higher than the national average in the STEPS Survey 2013[8].

More people in the municipality also have lower physical activity compared to STEPS Survey 2013(6.4%)[8]. The study also highlights the variability in the number of meals and sheds light on the fact that most of the population (>60%) prefers spicy and/or fried food over those free from spice or fry. Unlike study conducted in Ilam, people at Mahottari prefer public health services as much as private service for treatment centres [9]. The study highlights the need of immediate action on these multiple factors which will precipitate on future as real burden of disease in the elderly. Few studies have actively advocated the concern regarding the changing dynamics of life expectancy and what to expect in future regarding the age group of 40-60 years[10,11].

CONCLUSION

The study revealed that mainly eye problems, musculoskeletal problems, gastro-intestinal problems, arthritis, diabetes, cardiovascular diseases, and skin diseases were found among the respondents in the study area. There were some special health problems seen among the female respondents, like premenopausal and postmenopausal problems. It is because of their lifestyle, socioeconomic status, social and cultural beliefs, access to services, and health-seeking behavior. This study shows that the majority of the respondents were receiving health services from private practitioners. The majority of respondents had no regular health checkups, while the majority of respondents had health facilities within a 5 km radius. The majority of respondents were non-vegetarians, had spicy and fried food, and drank boiled water.

It is concluded that eye problems, musculoskeletal problems, gastrointestinal problems, and cardiovascular disease are major health problems in the forty- to sixty-year-old age group due to dietary habits, lack of exercise, much mental stress, educational level, per capita income of the family, knowledge to stay healthy, distance from health facilities, travel time, availability of health workers, and behavior of health staff towards respondents. The population between the ages of forty and sixty is growing at an accelerated rate, so developing countries like Nepal must quickly create particular initiatives for this demographic. Strengthening health programs is necessary in the general population, promoting health awareness through IEC, and emphasizing preventive measures such as lifestyle modification, regular exercise, and maintenance of optimal body weight.

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