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Assessment of common health problems and characteristics of health behaviour among elderly population in rural area of eastern India

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Abstract Naturally, aging is an inevitable process, and as people grow older, various physiological and pathological effects manifest in the human body. Old age should be viewed as a completely normal and natural biological phenomenon. It is crucial to extensively study the patterns of morbidity, encompassing common health issues and health behaviors in the elderly population, in order to formulate effective preventive strategies that can enhance their quality of life. The objective of this study was to assess the sociodemographic profile and the prevalence of multiple health issues and health-related behaviors among the elderly population. Among the 124 participants in this study, 59.7% were female, and 40.3% were male. The average age of the elderly participants was 70.3 years, with a significant portion (45.2%) falling within the 60-69 age group. Our study revealed that arthritis was the most common health condition among the elderly, affecting 64.5% of the participants, followed by gastrointestinal diseases (48.3%) and cataracts (45%). Given the diverse physical health challenges faced by the elderly, it is imperative to strengthen geriatric healthcare services at all levels of the healthcare system. This will ensure the provision of comprehensive and tailored services to the vulnerable elderly population, ultimately improving their overall well-being and quality of life.

Keywords: cross sectional study, urban area, geriatric, morbidity pattern

1. Introduction

Naturally, aging occurs, and the process of aging shows physiological as well as pathological effects on the human body. Old age should be regarded as an absolutely normal, inevitable biological phenomenon. Morbidity patterns in terms of common health problems and health behaviour in the elderly population need to be studied extensively to formulate effective and preventive strategies for better outcomes related to quality of life. A very nice quote by Sir. James Sterling Ross: "You do not heal old age. You protect it; you promote it; you extend it" (Parker 2021). Globally, 12% of the inhabitants are aged 60 years and above and will approximately double from 12% to 22%, i.e., from 900 million in 2015 to 2 billion by 2050 (WHO 2018). According to Population Census 2011, there are nearly 104 million elderly persons in India, i.e., contributing to 8.6% of the total population (male 8.2%, female 9.0%). Compatibly, in Odisha, which is a prominent state in Eastern India, 9.5% of residents are elderly (Elderly in India -Profiles and Programmes 2016).

Due to degenerative changes, the elderly population suffers from different types of diseases, mostly noncommunicable, such as cardiovascular, musculoskeletal, visual, and gastrointestinal diseases. Life expectancy is increasing in every census because of advancements in medical facilities, and there is a rapid expansion of the geriatric age group due to increased longevity as well as health problems in terms of morbidities (Jain et al 2017).

The ever-changing demographic profile and fast sociodemographic changes resulted in reshaping the age pyramid, favoring a more aging population and simultaneously demanding new needs of society. Although various national and state-wide aggregated data related to health problems associated with elderly individuals are available, there is an imperative need for local circumstantial information that will help program managers at the local level. In the past, numerous studies were conducted to determine the common health problems in the geriatric population, but none were related to the present study area. In view of the above context, the present study was conducted to gather localized data with the objective of assessing the sociodemographic profile and health status of elderly individuals in the field practice area of the Rural Health Training Centre (RHTC), Jamujhari, Khordha.

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Utilization of health and social services is seen to be intimately associated with age rather than any other characteristics. Simultaneously, there is growing evidence that elderly people are at risk for multiple morbidities, and correspondingly, the health-seeking behaviour of elderly persons is low in comparison to adult age groups. Numerous rising questions have emerged regarding how older persons seek care in response to growing health needs. With this background, the current study was conducted to determine the characteristics of health behaviour in the geriatric population.

2. Materials and Methods

It is a community-based cross-sectional study conducted in the field practice area of the Rural Health Training Centre (RHTC), Jamujhari, Khordha, associated with the Department of Community Medicine, IMS & SUM Hospital, Bhubaneswar, within the time period from 1st October 2021 to 31st December 2021. The study has been approved by the IEC with reference no. DMR/IMS.SH/SOA/000379. The study population includes elderly persons above the age of 60 years of both sexes residing in that area for at least one year and willing to participate in the study. Those who were seriously ill or cognitively impaired or not willing to participate were not included in the current study.

2.1. Sample Size

There are 13 villages included in the RHTC field practice area. The sample size was calculated by using the formula $n= Z^2PQ/d^{2,}$ where Z = 1.96. Considering the 95% confidence interval and prevalence P by default 50% with Q= 1-P, with an allowable error of 8%, the sample size was found to be 150. In the rural area among the adopted villages, systematic sampling was adopted to select the households, and the first household was selected randomly. From the selected households, only one elderly person was randomly included in the study population. The process was repeated until the desired sample size was obtained. If the selected household did not have an elderly person or in case of nonresponse, the immediate next household was selected. After obtaining the desired sample size, we mobilized them to attend scheduled out-reach villagewise NCD (Non-Communicable Disease) screening camp during the study period. Out of 150 selected elderly few apathetic individuals not extending their interest in participation, we were able to collect information from 124 elderly persons who visited the NCD screening camp during the defined study period.

2.2. Methodology

A semistructured questionnaire that was predesigned and pretested was prepared containing questions relating to the information on sociodemographic profile and health status of the study population. After obtaining consent, data were collected from each patient by taking a detailed history, examining them clinically, and reviewing the past health-related records and history of previous treatment received by the defined study population. The questions were asked in the local language though prepared in English. The interviews took approximately 20 to 25 minutes each.

2.3. Statistical analysis

The collected data were analysed by suitable statistical methods (chi square, percentage) using SPSS (version 25) software after entering in Microsoft Excel. Statistically, a *p* value of less than 0.05 was considered a significant association.

3. Result

3.1. Sociodemographic profile

Out of 124 participants in this study, 59.7% of the participants were female and 40.3% were male. The mean age of the elderly population was 70.3, and most of the study subjects (45.2%) were 60-69 years of age; 37.1% were 70-79 years of age, and only 17.7% were above 80 years. (Table 1).

This elderly group of the studied population predominantly lived as nuclear families (69.4%), while 30.6% of individuals resided in joint family norms. According to Kuppuswamy's socioeconomic status classification, our study shows that out of 124 subjects, 37.1% belong to the upper lower class, 25.8% belong to the upper middle class, 24.2% to the lower middle class, 9.7% to the lower class and 3.2% belong to the upper class. Although our study was performed in a medical college rural field practice area that is situated adjacent to the state capital Bhubaneswar, surprisingly, it was observed that a larger section of the elderly population (56.5%) was illiterate, which is a greater concern that needs to be addressed. Among the studied elderly population, 67.7% were addicted to various forms of tobacco and alcohol.

3.2. Morbidity profile

The most common morbidity among elderly people in our study was arthritis (64.5%), followed by gastrointestinal diseases (48.3%), cataract (45%) with 27.4% operated cases, hypertension (43.5%), sleep disturbances (38.7%), respiratory morbidities such as COPD, asthma (19.4%), urinary incontinence (16.1%), diabetes (12.9%) CVS disorders (6.5%) and neurological disorders (3.2%).

Arthritis was found to be the most common morbidity among the respondents and was observed in 64.5% (80 out of 124) of elderly persons. These arthritic disorders mostly presented as chronic joint pain and were found to be more predominant among elderly females (70.3%) than elderly males (56%). The above condition may be attributed to the accelerated osteoporosis occurring in the knee and other joints. These gender differences in presentations of arthritic conditions were not significantly associated among study subjects (x^2=3.55, p value=0.169).

Table 1 Sociodemographic profile of the study subjects (n=124).

Sl No.	Characteristics	Males N=50(40.3%)	Females N=74(59.7%)	Total N=124
1	Age group:			
	60-69	24(48.0)	32(43.2)	56(45.2)
	70-79	20(40.0)	26(35.1)	46(37.1)
	>80	6(12)	16(21.6)	22(17.7)
2	Mean Age	69.92	70.62	70.3
3	Type of family:			
	Nuclear	30(60.0)	56(75.7)	86(69.4)
	Joint	20(40.0)	18(24.3)	38(30.6)
4	Socioeconomic Status:			
	Upper	2(4.0)	2(2.7)	4(3.2)
	Upper middle	10(20.0)	22(29.7)	32(25.8)
	Lower middle	12(24.0)	18(24.3)	30(24.2)
	Upper lower	20(40.0)	26(35.1)	46(37.1)
	Lower	6(12.0)	6(8.1)	12(9.7)
5	Educational status:			
	Illiterate	10(20)	60(81.1)	70(56.5)
	literate	40(80)	14(18.9)	54(43.5)
6	Addiction (tobacco, alcohol)	30(60.0)	54(73.0)	84(67.7)
7	Spouse:			
	Dead	13(26.0)	50(67.5)	63(50.8)
	living	37(74)	24(32.4)	61(49.2)

Information from Table 2 predicts that out of 124 study subjects, 54 (43.5%) had hypertension. In the current study, hypertension was not significantly associated with sex, as nearly 43.2% of females (32 out of 74 females) and 44% of males (22 out of 50 males) were found to be hypertensive. Amongst the hypertensive patients, only 73% were aware of the hypertensive status, and surprisingly, 55.5% of them were on medication. Overall, 12.9% of the study subjects (16 out of 124 elderly) were suffering from diabetes.

In the present study, approximately 59.7% of elderly participants had anaemia, of which 75.5% of females and 36% of males presented with pallor as a clinical presentation. These substantial gender differences in anaemia prevalence were found to be statistically significant ($p<0.05$).

The principal reason for reduced vision among the aging population in low- and medium-income countries is cataracts, and identical findings were detected in 45.2% of respondents in the present study. Nearly 34 (27.4%) elderly individuals did not have any visual impairment. The remaining 27.4% of participants had previously undergone cataract surgery. Out of the 56 unoperated cataract cases identified, 40% of males and 27% of females had cataracts. The occurrence of cataract was not significantly associated with the gender of the study subjects (x^2=1.15, p=0.564)

Hearing impairment is one of the most common disabilities noticed in the geriatric population; however, in the present study, only 12.9% (16 out of 124 study subjects) had hearing impairment.

Disorders related to malnutrition were evaluated thorough the anthropometric measurements, and BMI was calculated for all study subjects. Considering that the BMI of 78 (62.9%) study subjects was normal, 28 (22.6%) were underweight, and 18 (14.5%) were overweight. Out of 74 females, 62.2%, 18.9% and 18.9% were normal, underweight and overweight, respectively; similarly, out of 50 males, 64%, 28% and 8% were normal, underweight and overweight, respectively. This gender difference in the prevalence of diverse categories of malnutrition was not significantly associated (x^2=1.15, p=0.564).

Information in Table 3 illustrates the behaviour towards the usual course of seeking care during their common illness. Out of the 124 elderly individuals who reported geriatric problems, nearly 48% sought care from nearby health care facilities, and surprisingly, more than half of them (52%) had not previously contacted any formal health care service provider. A set of responses was composed to identify the reasons for poor health-seeking behaviour, and the dataset was framed to collect the particulars from both service and respondent characteristics. With regard to issues related to service characteristics, 34% of respondents who had not sought any health care perceived the unavailability of quality health care in hospital settings as

the major reason that hindered them from seeking care. Among the respondent characteristics, out of the 64 elderly persons with poor health-seeking behaviour, 76% sought care from informal service providers (self-medication and use of drugs over the counter).

Table 2 The morbidity pattern of the study population.

Sl No	Morbidity Pattern	Morbidity Status	Male (n=50)	Female (n=74)	Total (n=124)	
		No	28(56%)	42(56.8%)	70(56.5%)	Chi-Square= 0.007
1	Hypertension	Yes	22(44%)	32(43.2%)	54(43.5%)	p value=1.00
						df=1
		No	32(64%)	18(24.3%)	50(40.3%)	Chi-Square= 19.5
2	Pallor	Yes	18(36%)	56(75.5%)	74(59.7%)	p value=0.0009
						df=1
		No	46(92.0%)	62(83.8%)	108(87.1%)	Chi Square=1.79
3	Diabetes Mellitus	Yes	4(8%)	12(16.2%)	16(12.9%)	p value=0.275
						df=1
		No	22(44%)	22(29.7%)	44(35.5%)	Chi-Square=2.65
4	Arthritis	Yes	28(56%)	52(70.3%)	80(64.5%)	p value=0.103
						df=1
	Cataract	No	16(32%)	18(24.3%)	34(27.4%)	Chi-Square=1.15
5		Cataract Not operated	20(40%)	36(48.6%)	56(45.2%)	p value=0.564
						df=2
		Cataract operated	14(28%)	20(27%)	34(27.4%)	
		No	44(88%)	64(86.5%)	108(87.1%)	Chi-Square=.061
6	Hearing impairment	Yes	6(12%)	10(13.5%)	16(12.9%)	p value=1.00
						df=1
		Under weight	14(28%)	14(18.9%)	28(22,6%)	Chi-Square=3.55
7	BMI	Normal	32(64%)	46(62.2%)	78(62.9%)	p value=0.169
		Over weight	4(8%)	14(18.9%)	18(14.5%)	df=2

Table 3 Factors affecting health-seeking behavioural practices.

Health Seeking behavioural practices (N=124)		Yes	No
Care sought from any formal health care provider previously		60 (48%)	64 (52%)
Response of study subjects for not seeking the care (N=64)			
Supply Side	Unavailability of quality health care	20 (31%)	44 (69%)
(Service characteristics)	Inaccessibility to get the service	5 (8%)	59 (92%)
	Inappropriate attitude of service provides	15 (23%)	34 (77%)
Demand Side	Care sought from informal source	49 (76%)	15 (34%)
(Respondent Characteristics)	Financial constraint	25 (39%)	39 (61%)
	Lack of support	29 (45%)	35 (55%)
	Cultural factors	3 (5%)	61 (95%)

In the comparison of socioeconomic status and health-seeking behavior with different comorbidities, only cataract was found to be a strong predictor with odds greater than one. Similarly, educational status had increased odds of arthritis [0.97 (0.46-2.05), pallor [0.97 (0.47-2.03)], hypertension [0.99 (0.48-2.03)], and cataract [0.98 (0.44-2.18)] [Table 4].

Table 4 Morbidity Pattern with Socioeconomic status, Health seeking behaviour and Educational status.

		Arthirtis			Pallor			HTN			Cataract		
Characteristics		Yes	No	OR(CI)	Yes	No	OR(CI)	Yes	No	OR(CI)	Yes	No	OR(CI)
SES	Upper	2	2	Reference	2	1	Reference	2	2	Reference	3	1	Reference
	Middle	40	20	0.5 (0.06-3.81	37	25	1.35 (0.11-15.7)	27	35	1.29 (0.17-9.8)	45	17	1.13 (0.11-11.7)
	Lower	38	22	0.57 (0.07-4.4)	35	24	1.37 (0.11-15.9)	25	33	1.32 (0.17-10.0)	42	16	1.14 (0.11-11.80)
Health Seeking Behaviour	Good	38	21	Reference	35	24	Reference	26	33	Reference	43	16	Reference
	Poor	42	23	0.49 (0.47-2.06)	39	26	0.97 (0.47-1.99)	48	37	0.6 (0.31-1.18)	47	18	1.02 (0.46-2.26)
Educational Status	Illiterate	45	25	Reference	41	28	Reference	30	39	Reference	50	19	Reference
	Literate	35	29	0.97 (0.46-2.05)	33	22	0.97 (0.47-2.01)	24	31	0.99 (0.48-2.03)	40	15	0.98 (0.44-2.18)

4. Discussion

The proportion of the elderly population in India was 8% in 2015. Life expectancy at birth has shown a substantial improvement in recent years, and the differential increase is more profound in females than in males. In our study, the share of the elderly female population surpassed that of their male counterparts, indicating the gradual feminization of geriatric residents. elders. This observation is admissible, as numerous studies including the latest census enumeration indicate that there is a gradual increase in the life expectancy of females in comparison to males. An identical finding was observed in a study conducted by Kalasker et al (2016), and analogous research performed by Thakur et al (2013) showed that female elders outnumbered male elders. The results from the current study show that with increasing age, there is a decreasing trend in the proportion of the elderly population. Analogous results were also noted in the majority of the studies, such as studies by Tiwari et al (2010) and Lina et al (2009).

The predominance of the nuclear family in the present study area is substantiated by a similar study finding conducted by Polisetty and Seepana (2017). In the current study, more than half (53.7%) of the study subjects were illiterate, which is in contrast to the study findings of Srinivasan et al (2010), where the reported illiteracy was 4.8%. The level of literacy and health of an individual is intrinsically linked since literacy empowers better utilization of health-related services and improved self-care practices.

In the present study, the most common morbidity found was arthritis (64.5%), followed by gastrointestinal diseases (48.3%) and cataracts (45%). Kumar et al (2015) and GJ et al (2016) observed that arthritis was the most common morbidity, followed by hypertension, cataracts, and diabetes. According to the study findings of Jadav et al (2017), elderly individuals had the most problems with musculoskeletal disorders (64.9%), followed by depression (54.2%) and obesity (46.2%). Similar findings were also observed by Kalasker et al (2016), where the prevalence of various disorders was musculoskeletal 63.4%, gastrointestinal 19.7%, respiratory 16.2%, cardiovascular 14.8%, nervous system 9.6%, and genitourinary 6.2%.
In our study, a major proportion of the elderly population was identified as hypertensive (43.5%). Likewise, Reshmi et al (2017) and Sudarshan et al (2017) found hypertension to be the most common morbidity among elderly individuals.

In the present study, approximately $3/4^{th}$ of the elderly had anaemia, and the gender differences in anaemia prevalence were found to be statistically significant. An identical result was also observed in a study conducted by Singh et al (2018), where 56.89% of male participants and 73.20% of female participants had pallor, and this association was statistically significant ($p<0.05$) among elderly individuals. In a study by Paul et al (2015), the anaemia prevalence among elderly residents was 38.2%, and it was detected in 38.7% and 37.7% of females and males, respectively.

The prevalence of eye-related morbidities, particularly cataracts, was observed in 45% of the study subjects. Similarly, Purohit. et al (1976) reported the existence of cataract in 40% of elderly individuals. Additional studies by Singh et al (2018) found that eye-related morbidities were most common, followed by those of the cardiovascular system, gastrointestinal system, respiratory system, and musculoskeletal system.

Hearing impairment was noticed in 12.9% of elderly subjects in the current study. Numerous studies conducted by Singh et al (2012) and Agrawal et al (2011) stated that the occurrence of similar geriatric hearing problems ranged from as high as 38.1**%** to as low as 4.5%. An additional study by Jain et al (2017) reported that the majority of the elderly population had hearing impairment, followed by anaemia, HTN, joint pain, dental problems, and cataracts.

Observations from the current study showed that nearly 52% of the elderly were not seeking treatment from any formal source of health care services, signifying a higher number of study subjects with poor health-related behaviour. The above observed findings are in contrast with another study conducted in Shimla by Sharma et al (2011), where 34.8% of elderly individuals did not seek treatment during their illness. In the present study, although 52% of the elderly did not attend any formal source of health care facilities, 76% of them were associated with various nonformal sources of health care services, and the majority of them were dependent on over-the-counter drugs and practicing self-medication. Worldwide documented study findings show that a greater number of the geriatric population is dependent on self-medication and prefers over countermedication during their routine health illness by Waweru et al (2003) and Abdulraheem (2007).

5. Conclusions

The current study finding was observed with a high burden of existing geriatric health problems in the study area, proportionately higher illiteracy in the elderly and more than half of the elderly having poor health behaviour towards seeking care. As the geriatric group necessitates specialized attention, the facilities providing geriatric health care services should be strengthened at all levels of the health care system to provide comprehensive services to the vulnerable elderly population. The expanded health care services designed in Ayushman Bharat Comprehensive Health Care (AB-CHC) practices will be a lead in addressing geriatric problems. Inclusion of major health problems of elderly individuals in the Community Based Assessment checklist (CBAC) and subsequent quality screening will have a paradigm impact in resolving the current issue. As a high illiteracy rate was ascertained in the elderly population, which was a major contributor to low health care seeking behaviour, awareness among them should be encouraged for routine health check-ups by utilizing various existing health care platforms. The authors conclude that, in line with the NPHCE (National Program for Health Care of Elderly), a

multidisciplinary strategic approach involving diverse systems of medicine and constituting geriatric clinics as an integral part of the comprehensive primary health care approach could assist in addressing geriatric health issues.

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Ethical considerations

The study has been approved by the IEC with reference no. DMR/IMS.SH/SOA/000379.

Conflict of Interest

The authors declare no conflicts of interest.

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