Original Research Article

PREVALENCE OF MORBIDITIES AMONG ELDERLY POPULATION OF JODHPUR, INDIA.

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Abstract

Aging of a population is a matter of great concern for the health sector. The elderly are on the whole less healthy than the non-elderly. The aged population has special health problems that are basically different from those of adult or young.

The present study was conducted to examine the prevalence of morbidities among elderly population of Jodhpur, India, across their age and gender background. The treatment taken or not taken for one or the other morbidities were also recorded and delineate the common health conditions affecting the elderly respondent.

For this purpose, data from 320 elderly respondents (160 men and 160 women) who were residing in Jodhpur city, India, were collected and analyzed with the cross- tabulation and Chi-Square Test using SPSS version 16.0.

The majority (75.9%) of the elderly respondent were in the age group of 61-75 years of age. The findings revealed that the majority of elderly respondents were suffering from Hypertension and Cataract, followed by Diabetes, Heart diseases, and Osteoporosis. Treatment seeking behavior was more prevalent for Heart Diseases (97.5%), Chronic lung diseases (96%), Diabetes (92.5%) and Hypertension (90.9%) as compared to Arthritis (87.5%), Osteoporosis (78.5%) and Depression (65.5%).

Awareness among the elderly population and their caretaker should be created for regular medical check-ups to ensure prevention and early detection of the chronic diseases. Modification of strategy towards the wellbeing of elderly is a priority at this juncture.

Keywords: Elderly, Morbidities, Hypertension, Cataract, Diabetes.

Introduction

Aging is a universal phenomenon associated with deteriorating health status. It is said that nobody grows old merely by living a certain number of years. With the passage of time, certain changes take place

in an organism leading to morbidities, disabilities and even death [1,2]. The boundary of old age cannot be defined exactly because it does not have the same meaning in all societies. The government of India adopted 'National Policy on Older Persons' in January 1999. The policy defines 'senior citizen' or 'elderly' as a person who is of age 60 years or above [2,3]

In 2010, an estimated 524 million people were aged 65 or older i.e. 8% of world's population. By 2050, this number is expected to nearly triple to about 1.5 billion, representing 16% of world's population [4,2]. The absolute number in India increased from 76 million in 2001 to 100 million in 2011. According to the Census 2011, the elderly population aged older than 60 years' account for 7.5% of the total population and is projected to rise to 12.4% by the year 2026. In Rajasthan, India, 6.8% population is aged older than 60 years. [5,6].

Old age is not a disease in itself, but the elderly are vulnerable to long-term diseases of insidious onset such as cardiovascular illness, CVA (Cerebrovascular accident), cancers, diabetes, musculoskeletal and mental illness. They have multiple symptoms due to decline in the functioning of various body functions [7]

Many health problems are known to increase with age and this demographic trend may lead to an increase in the absolute number of health conditions in the population. In addition, because there is growing body of evidence that older people are at risk for multiple, comorbid conditions, health-care seeking will probably also increase [8] This is especially important when characterizing older adults, who are at greatest risk for disease and disability, dependent life, and consumption of costly health care services [9]

Changes have been seen in the age structure of the population due to a steady rise in life expectancy. The needs and problems of the elderly vary significantly based on their socio-demographic profile [3]. The present study aimed to know the selected morbidities prevalent among elderly in an urban population of Jodhpur, India, delineate the treatment-seeking behavior and evaluate the differences in the chronic morbidities between the Gender, Younger elderly group, and older elderly group.

Methodology

The present study was carried out in the urban area of Jodhpur, out of which total 320 respondents were selected. The study population comprises elderly people aged 61 years and above. In this study, Jodhpur was divided into four parts, and an equal number of respondents were purposively selected from each area. Elderly respondents were interviewed by home visits (from colonies), Geriatric Centers, Geriatric volunteer's groups, Old age home, and temples. A Pre-designed, pre-tested Performa was used to collect data regarding demographic characteristics and morbidity conditions. For morbidity conditions, detailed history about the diseases was asked and also quarried about the treatment taken or not. Written informed consent was taken from each study participant. Care was also taken to ensure privacy and confidentiality of the interview as part of the study. Data entry was performed using MS Excel 2016 and for analyses, SPSS version 16.0 was used.

Result

In the present study,320 respondents were selected, aged 61years and above, to evaluate the differences in the morbidities between the Gender, Younger elderly group, and older elderly group.

Sample characteristics*:*

Table -1 Mean and Standard Deviation of Age according to Gender

Variables	Mean/S.D.	Men	Women	Total
Age	Mean	71.08	68.85	69.96
	S.D.	7.485	7.361	7.495

Overall mean age was 69.96±7.50 years. The mean age of men was 71.08±7.49 years and that of women was 68.85±7.36 years. The majority (75.9%)of the respondents were in the age group of 61-75 year i.e. young elderly group while 24.1% were in the older elderly group (76years and above). In the present study, among the educated respondents, 36.9% of men were graduate, while only 9.4% of women were graduate. In this study, 40% of women had no formal education when compared with men (5.6%). The majority (93.8%) of the elderlies were Hindu by religion. The study shows that 51.3% women and 76.9% of men were married, living with their spouse. In the comparison of men 23.1%, 48.8% women were a widow or separated.

Morbidity Profile:

Table-2 Percentage Distribution of the Elderly respondent suffering from Different Morbidities across their Gender Background

Types of Morbidities	Men		Women		Total	
	N=160	%	N=160	%	N=320	%
Hypertension	90	56.2	86	53.8	176	55.0
Cataracts**	76	47.5	95	59.4	171	53.4
Diabetes	52	32.5	55	34.4	107	33.4
Heart diseases (CHD/Angina/Blockage)**	47	29.4	33	20.6	80	25.0
Osteoporosis*	14	8.8	38	23.8	52	16.2
Gastrointestinal system/liver/Hemorrhoids/Hernia	27	16.9	13	8.1	40	12.5
Edentulism	18	11.2	21	13.1	39	12.2
Genitourinary Diseases	21	13.1	14	8.8	35	10.9
Chronic lung disease/ asthma	18	11.3	14	8.8	32	10.0
Depression	14	8.8	15	9.4	29	9.1
Arthritis	8	5.0	8	5.0	16	5.0
Renal Diseases	11	6.9	4	2.5	15	4.7
Stroke	6	3.8	5	3.1	11	3.4
Cancer	3	1.9	1	0.6	4	1.2
Other-						
Glaucoma	1	0.6	3	1.9	4	1.2
Anemia	0	0.0	3	1.9	3	0.9
Parkinson's disease	2	1.2	0	0.0	2	0.6
Dementia	1	0.6	0	0.0	1	0.3

*, **= The Chi-Square test results for the morbidity across their Gender background are significant at 0.001, 0.05 levels, respectively.

Information about the prevalence of different morbidities among the elderly persons across their gender background is provided in Table 2. On the whole, it is

"Prevalence of morbidities among elderly population of Jodhpur, India."

observed that majority of the elderly suffering from Hypertension (55%), Cataract (53%) and Diabetes (33%) followed by Heart diseases (25%) and Osteoporosis (16.2%). However, it is interesting to note that such gender differentials in morbidities were strikingly large and chi-square test results were also turned out as highly significant (p<0.001) in the case of Osteoporosis. The difference was also significant (p=<0.05) for Cataract as the percentage were higher in women (59.4%) for Cataracts as compared to men (47.5%) but the prevalence of heart diseases was significantly higher among men (29.4%) than in women (20.6%).

Table-3 Percentage Distribution of the Elderly Respondent Suffering from different Morbidities across their Age Groups

| Types of Morbidities	Younger elderly group		Older elderly group		Total	
	N=243	%	N=77	%	N=320	%
Hypertension	133	54.7	43	55.8	176	55.0
Cataracts*	113	46.5	58	75.3	171	53.4
Diabetes*	95	39.1	12	15.6	107	33.4
Heart disease(CHD/Angina/Blockage)	64	26.3	16	20.8	80	25.0
Osteoporosis	41	16.9	11	14.3	52	16.2
Gastrointestinal system/liver/Hemorrhoids/Hernia	27	11.1	13	16.9	40	12.5
Edentulism*	19	7.8	20	26.0	39	12.2
Genitourinary Diseases	25	10.3	10	13.0	35	10.9
Chronic lung disease/ Asthma	22	9.1	10	13.0	32	10.0
Depression	22	9.1	7	9.1	29	9.1
Arthritis	10	4.1	6	7.8	16	5.0
Renal Diseases	11	4.5	4	5.2	15	4.7
Stroke	9	3.7	2	2.6	11	3.4
Cancer	4	1.6	0	0.0	4	1.2
Other-						
Glaucoma	4	1.6	0	0.0	4	1.2
Anemia	2	0.8	1	1.3	3	0.9
Parkinson's disease	0	0.0	2	2.6	2	0.6
Dementia	0	0.0	1	1.3	1	0.3

*= The Chi-Square test results for the morbidity across their Age background are significant at 0.001 level.

It is clear from Table-3 that among the Younger elderly group, Hypertension was most common (54.7%), Followed by cataract (46.5%) and Diabetes (39.1%); While Cataract was most common (75.3%) in the Older elderly group. The difference was found highly significant between Younger elderly group and Older elderly group for the diseases Cataract, Diabetes, and Edentulism (p <0.001). Hypertension equally affected both the groups (54.7%; 55.8%).

"Prevalence of morbidities among elderly population of Jodhpur, India."

Taking Treatment or Not

Figure-1 Percentage distribution of the elderly by treatment for the illness taken across their Gender background
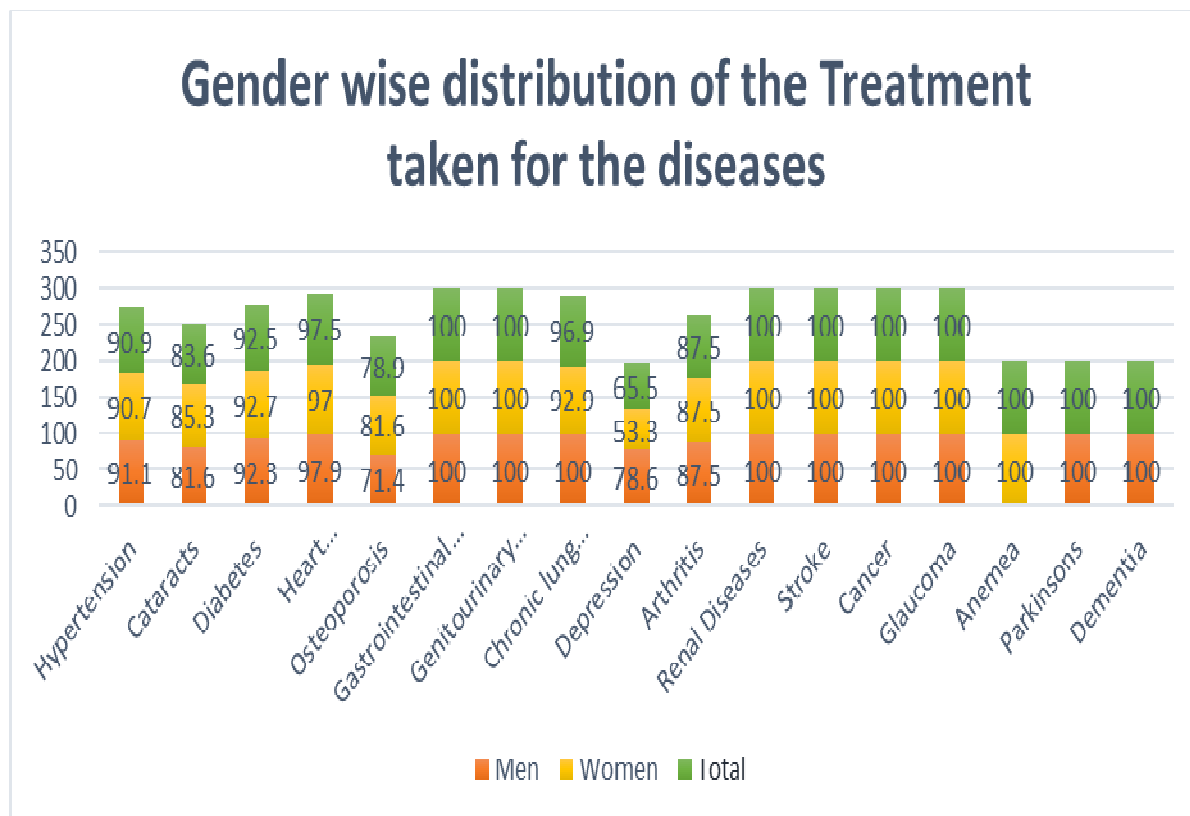

In the Figure-1, the information about the extent of elderly people taken treatment for various morbidities under consideration across their gender background. Among the total respondents, one can see that all the respondents (100%) have taken treatment for Gastrointestinal system/ liver/ Hemorrhoids/Hernia, Genitourinary Diseases, Renal Diseases, Stroke, Cancer, Glaucoma, Anemia, Parkinson's disease and Dementia followed by Heart diseases like CHD/Angina/Blockage (97.5%), Chronic lung disease/ Asthma (96.9%), Diabetes (92.5%), Hypertension (90%). The treatment is taken for Depression (65.5%), Osteoporosis (78.9%), Cataract (83.6%) and Arthritis (87.5%) compared to an average extent.

When gender was compared for treatment taken for all diseases. It was observed that almost similar results were found in both genders except Osteoporosis (71.4% Men; 81.6% Women) and Depression (78.6% Men; 53.3% Women). (Figure-1)

Figure-2 Percentage distribution of the elderly respondent by treatment for the illness taken across their Age groups.

Age group wise distribution of the treatment taken for the diseases
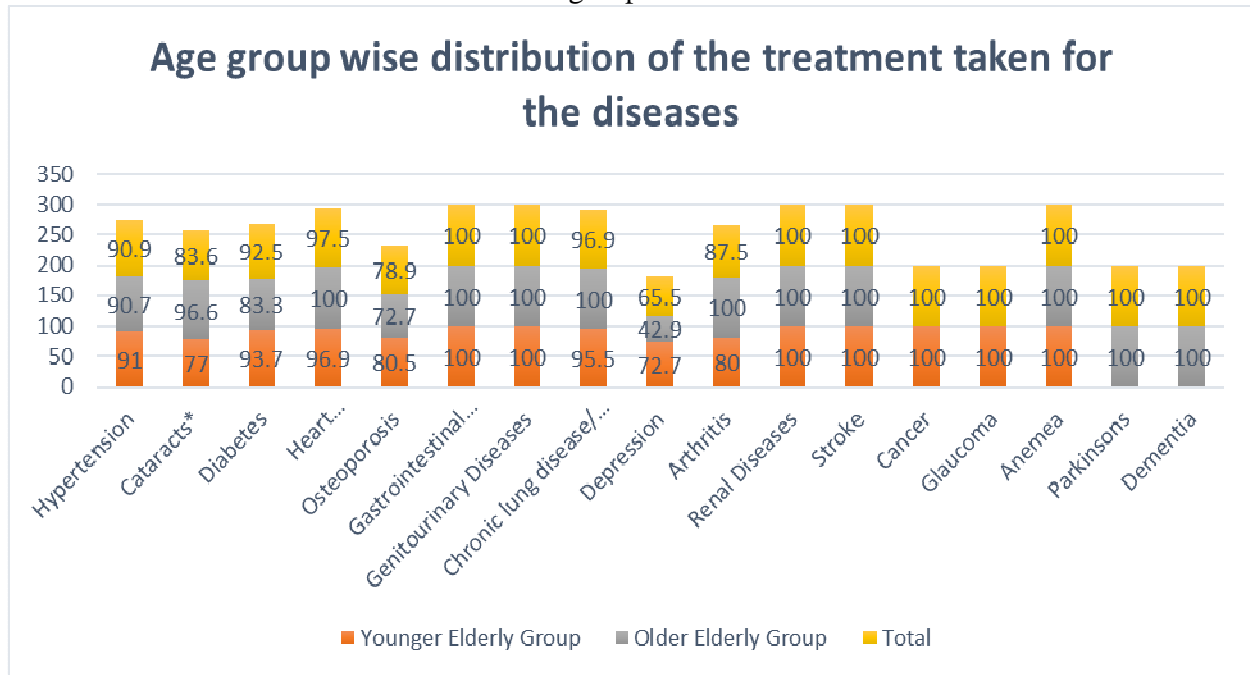
*The Chi-square test results found significant at 0.001 level for the treatment taken for Cataracts across their Age groups.

While considering the age groups, a significant (p=<0.001) difference was found between Younger elderly respondent group (77%) and older elderly respondent group (96.6%) for the treatment of Cataract. As cataract is an age-related disease and operated only in the condition when it gets matured properly, this may be a reason in the older elderly respondent group for higher rates of surgery as compared to the younger elderly respondent group. For the diseases, Diabetes, Osteoporosis, and Depression the percentage for taken treatment were higher in the Younger elderly respondent group (93.7%, 80.5%, and 72.7% respectively) as compared to older elderly respondent group (83.3%, 72.7% and 42.9% respectively). (**Figure-2**)

Discussion

In the present study, most of the study respondents belonging to 61-75 years of age, i.e.75.9%, similar to study conducted in 2012 by Shraddha K. (74.1%) [3] and in 2014 by Rastogi S. (71%) [10], in contrast to study done by Chaudhary M. (2013) (69%).

In the present study, mean age was 69.96±7.50 years as compared to a study done by Reddy B. N. (2014) (69.8 ±7.8 years) [11] and Sharma D. (2013) (68.5 years) [12]. An equal number of elderly Men and women were selected, almost similar (49% Men and 51% Women) to the study done by Joshi K. (2003) [13].

Prevalence of Hypertension (55%) was found similar to the studies done by Joshi K. (2003) [13] and Sharma D. (2013) [12] i.e.56%. The comparative study done by Sharma D. (2013) in the rural and urban north India reveals that the presence of hypertension in older persons in urban areas (56%) was about twice that in rural areas (25%). This might be explained by the fact

that people in rural areas practice farming and manual labor and this lowers the rate of obesity. Another study conducted by Kandpal S. D. (2013) [14] in Dehradun also showed higher prevalence (59.3%) of Hypertension. The percentage was much higher as compared to studies done by Bharati R.D. (2011) (47.7%) [15], Kishor S. (2007) (41.4%) [1] and Shraddha K. (2012) (29.3%) [3], Rajee P. (2015) (28.7%) [16] in different parts of India.

In the present study, Cataract found second most prevalent morbidity (53%). 'The India Study of Age-related Eye Disease (INDEYE study)' [17] conducted in North and South India reveals that the prevalence of cataract was 73.8% in north India and 71.8% in south India and the prevalence of unoperated cataract in people aged ≥60 was 58% in north India and 53%in south India. In the present study, the difference was found significant among women (59.4%) and men (47.5%) at p-value <0.05. Many studies worldwide have reported a higher prevalence of cataract among women [18,19]. The results suggest that higher rates of cataracts in women in the present study are not explained solely by differential access to health care, but may be due to other factors such as higher levels of exposures to risk factors like Bio-mass fuel or hormonal factor. The results are also comparable with the studies done in Mysore (30%) [3], Shimla hills (30%) [12], Haryana (29%) [13] and Dehradun (28.5%) [14].

In the present study, 33% elderlies were found Diabetic. Both Men and women were equally affected but according to age group, the prevalence was 39.1% among the younger elderly group as compared to older elderly group (15.6%). The reason might be the lifestyle which they lead in their whole life. The results when compared with the other parts of India, prevalence of Diabetes was found 43% in Puducherry [15], 25.2% in Dehradun [14], 21% in Ahmedabad [10], 16.7% in Pune [16],13.9% in Mysore [3] 8% in Haryana [13] 5.8% in Shimla [12].

One fourth (25%) of the study respondents had Heart diseases like CAD, Angina, Blockage or Heart attack in their lives. The prevalence of heart diseases was significantly higher among men (29.4%) than in women (20.6%). As women have a protective hormone towards heart diseases, called 'Estrogen', which lowers the rate of heart diseases in women. So this may be the reason for the low rate of heart diseases among women. Mackey J. (2004) also revealed in the book "The Atlas of Heart Disease and Stroke" that there are higher rates of coronary heart disease among men compared with women in the premenopausal age [20]. The overall percentage found lesser than a study done in South India 49.1% [21] but much higher than the studies done in other parts of India i.e. 8.6% in Pune [16], 8% in Shimla [12], 4% in Ahmedabad [10] and 3.8% in Mysore [3]. A study conducted in Dehradun [14] showed almost similar results (22%) as in the present study.

The percentage for Osteoporosis was 16.2 for the elderly respondents. The chi-square test results were also turned out as highly significant (p<0.001) for gender, in case of Osteoporosis. Which means the percentage of women found much higher (23.8%) as compared with men (8.8%). In the women, after the menopausal period, many hormonal changes take place. So due to this hormonal imbalance, the rate of absorption of Calcium and Phosphorus decreases which results in low bone density, so women are prone to develop Osteoporosis after a menopausal period. Steven R. (2002) also summarized in the article "Epidemiology and Outcomes of Osteoporosis" that Bone mass declines and the risk of fracture increases as people age, especially as women pass through the menopause [22]. Another reason may be a lesser intake of milk and milk products or low exposure to sunlight.

The prevalence of Gastrointestinal system related diseases like Liver cyst or gallbladder stone, Hemorrhoids, Hernia,

Appendicitis, and Peptic ulcer were found 12.5% which is comparable with studies done in Bangaluru (16.6%) [23] and south India (23.5%) [21].

In the present study, we found Edentulism in 12.2% elderly respondents, that is almost similar (11.7%) to the study conducted by WHO (2014) in 6 countries including India above the age of 50 years. The prevalence rate was higher (16.3%-21.7%) in three countries i.e. India, Mexico, and Russia than China, Ghana and South Africa (3% - 9%) [24]. In the present study, a significant difference (p<0.001) was found between both age groups and a little difference was there between gender (men 11%; women 13.%). The percentage was much higher in the Older elderly group (26%) as compared to a younger elderly group (7.8%). Another review study done by David A. Felton [25], reveals that edentulous patients were found to be at higher risk for poor nutrition, to being Diabetic, Coronary artery plaque formation and to having Rheumatoid Arthritis.

Genitourinary Diseases like Urinary tract infection, enlargement of Prostate and Uterus removed, were affected 10.9% of respondent, whereas a south Indian study found it 4.7% [21].

The prevalence of Chronic lung disease like COPD, T.B., and Asthma, were found 10% in the present study, found almost similar to the studies done in South India (12.9%) [21] and Shimla (11.3%) [12] but lesser than a study conducted in Bangaluru (15.4%) [23]. A study done in Mysore, [3] reveals the prevalence of Arthritis was 15.7% which was three times higher than the present study (5%).

In the present study, we found 9% elderlies were suffering from Depression which is higher from a study done in Bangaluru (5.6%) [22] but lesser as compared to a study conducted in Ahmedabad (26%) [10]. Varghese M. (2004) reported in their study, varying degree of neuropsychiatric morbidity, out of

which, depression being the commonest disorder in the elderly [26].

In the present study, the prevalence of stroke was found 3.4%, while it observed 5.6% in a study conducted in Bangaluru [22].

In the present study, Renal Diseases like a Renal cyst and Renal stone were observed 4.7%, while it is observed 3% and 3.1% in the studies conducted in Ahmedabad [10] and Bengaluru [22] respectively.

About the treatment-seeking behavior, present study showed similar result (97.5%) for treatment of Heart diseases with a study conducted by Rajee P. (96%), (2015) [16] but the percentage was higher for Chronic lung diseases (96.9%), Diabetes (92.5%), Hypertension (90%) and Cataract (83.6%) in the present study as compared with the above study (64%, 76.9%, 66.8% and 57.9% respectively).

From the foregoing analysis and discussion, it can be concluded that the status of morbid elderly in Jodhpur is alarming. Among the elderly of Jodhpur, Hypertension, Cataract, Diabetes, Heart diseases and Osteoporosis were the most prevalent morbidities. Across the gender background, Men were more prone to develop Heart diseases while Women have Cataract and Osteoporosis. Diabetes and Heart diseases were more common in Younger elderly group while Cataract and Edentulism affected more to the Older elderly group. Depression, Osteoporosis, and Arthritis were the diseases for which people are not very aware and not very serious in taking treatment.

With the changing pattern of family and other socio-demographic factors, there is a continuous rise in the health problems of elderly in developing countries, in such circumstances, it would be beneficial to equip the elderly population, family members and the community with skills to tackle the physical as well as psychosocial problems related to the growing age in a

holistic manner. Awareness among the elderly population and their caretaker should be created for regular medical check-ups to ensure prevention and early detection of any morbidity. Modification of strategy towards the wellbeing of elderly is a priority at this juncture.

Acknowledgment

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