ORIGINAL RESEARCH PAPER

Epidemiology

TREATMENT ADHERENCE AMONG PEOPLE LIVING WITH HYPERTENSION IN PERIURBAN COMMUNITY OF CHANDIGARH: A CROSS SECTIONAL STUDY

KEY WORDS: Adherence to medication, People living with Hypertension, North India

Saurabh Kumar Gupta*

PhD scholar, Department of Community medicine and School of Public Health, PGIMER, Chandigarh)*Corresponding Author

ABSTRACT

Non-adherence to hypertension treatment prescription leads to poor blood pressure control and increases the risk of disease complications. The present study assessed level of adherence to medication among people living with hypertension. A cross sectional study was carried out at field practice area of Urban Health Training Centre (UHTC) Indira colony, Manimajra, Chandigarh. The sample were 100 selected using systematic random sampling. Descriptive data analysis was done. In female adherence to medication was observed lower (28.4%) than male (39.4%). There is need to address challenge of non-adherence through improvement in health literacy, ensure access to essential drugs and also strengthen to provider patients' relationship in primary heath care center.

INTRODUCTION

Non-communicable diseases are emerging as public health emergency and posing threat to public health globally. By 2030, reduction by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being, is one of the targets of the sustainable development goals (SDGS Goal-3).(United Nation Development Programme(UNDP), 2016) Data on the global burden of hypertension shows that more than > 26.4% of the adult population had hypertension in 2000 and projected to increase by about 60% by 2025.(Sharma, 2008) In India it accounts 10.8 % of all deaths and 4.6 % of all disability adjusted life years (DALYs) in the country. According to World Health Organization (WHO) report, the prevalence of hypertension in India among men and women aged 25 years or more was 23.1% and 22.6% respectively. (World Health Organization, 2005) It has been estimated that prevalence of hypertension among urban dwellers is 32.3% and 12% in the slums people of Chandigarh.(Misra et al., 2001) Though effective treatments are available for hypertension, more than half of the patients being treated discontinue their medications entirely within a year of diagnosis and, of those who remain under medication only about 50% take at least 80% of their prescribed medication.(Hyre, Krousel-Wood, Muntner, Kawasaki, & DeSalvo, 2007) Adherence to therapy has a strong positive influence on health outcomes. World Health Organization (WHO) defines adherence as "the extent to which a person medication taking behavior, following a diet and/or executing lifestyle changes, corresponds with agreed recommendations from a healthcare provider". (Guilbert, 2003) Poor treatment adherence is a roadblock to better quality of life. Studies from India have identified non adherence to antihypertensive medications as the main cause for poor blood pressure control and its consequences like stroke, heart failure and others. (Rao, Kamath, Shetty, & Kamath, 2014) Thus, the present study conducted to assess the magnitude of medication adherence and an attempt was also made to understand the barriers of medication adherence among people living with hypertension.

MATERIAL AND METHODS:

A Cross Sectional study was conducted at field practice area of Urban Health Training Center (UHTC) Community Medicine Department, PGIMER, Indira colony, Manimajra, of Chandigarh. Study was four-month from 15th January to 15th April 2016. A total 100 sample was interviewed. It was calculated by using a formula n= 4PQ/d2. Taking the proportion of people living with hypertension for adherence to medication in India is 25% from various studies (Kusuma & Das, 2008; Venkatachalam, Abrahm, Singh, Stalin, & Sathya, 2015) and relative precision as 10% (with 95% confidence interval) required sample size was came out to be 75. Considering 10% as non-respondent and missing patients in two consecutive visits. Systematic sampling technique was applied in list of hypertensive patients that had been already generated by the health workers from their respective field areas in Indira colony through house to house survey. It was planned to include only permanent residents of the colony, as in some cases the occupants of rented houses are migrants who were subjected to change their accommodation frequently. Patient who were diagnosed hypertension or are on antihypertensive drug for at least 6 months with Age > 20 years. Patients with co-morbid medical conditions like diabetes were also included. Refusal by patients to give consent for interview and Suffering from any acute conditions such as Myocardial Infarction (MI), stroke, acute renal failure and other life threatening diseases were excluded.

Data was collected using self-reported adherence in which the patients were asked to report the number of days, in which they were missed medication during last seven days. (Basu & Garg, 2017) Answer were dichotomous that was yes = 1 (Low adherence) or no = 0 (High adherence). Data was analyzed using Microsoft office Excel 2010 and SPSS software (version 16.4, SPSS Inc.) IBM Corporation, New York, USA.

RESULTS:

A total number of 100 people were interviewed. Majority of respondents were female (67.0%) with mean age 55.6 (±12.03) years. Results showed that the diabetes mellitus was more prevalent co-morbidities among both gender than other co-morbidities. 38 out of 100 respondents suffered from the diabetes mellitus and rests were suffered from different co-morbidities like heart problem, poor vision and stroke. Co-morbidities among people living with hypertension presented in table number 1

Table 1: Co-morbidities among hypertensive respondents

Co-morbidities	Male (n=33) n(%)	Female (n=67) n(%)	Total (n =100)
DM	10(30.3)	28(41.8)	38
Heart problem	5(15.2)	5(7.5)	10
Stroke	1(3.0)	2(3.0)	3
Poor vision	3(9.1)	15(22.4)	18
No	14(42.4)	17(25.4)	30

Figures in parentheses are percentage

The proportions of illiteracy were high 53.7% among the females compared to males with 21.2%. Prevalence of family history of hypertension was 27.1%.

Pattern of adherence to medication according to socioeconomic and demographic profile wise presented in Table number-2

Table:2 Socioeconomic and demographic profile wise pattern of adherence to treatment in Indira colony, Chandigarh

Variable	Total (n=100)	High adherence n=32 (%)	Low adherence n=68 (%)
Age			
≤55yrs	53	21(40)	32(60)
>55yrs	47	11(23)	36(77)
Gender			
Male	33	13(39)	20(61)
Female	67	19(28)	48(72)
Literacy level of patients			
Illiterate	43	14(42.6)	29 (57.7)
Literate	57	18(56.3)	39 (43.8)
Income			
<13,000	50	17(48.5)	33 (51.5)
>13,000	50	15(46.9)	35 (53.1)
Occupation			
Unemployed	48	15(46.9)	33 (51.5)
Employed	52	17(53.1)	35 (48.5)

Figures in parentheses are percentage

Overall proportion of adherence to medication was 32%. Adherence to medication was higher among the male 39% than female 28%.

DISCUSSION:

In the present study, about one-third (32%) of the people living with hypertension were showing high level of medication adherence. The results were similar to study done at a tertiary care hospital in Mangalore, South India found that 54% of hypertensive patients were having good drug adherence. In Kancheepurum district of Pune Maharashtra which showed that 25% of hypertensive patients were highly adherent to antihypertensive therapy,(Venkatachalam et al., 2015) while another study observed that only 16 % were adherent(Hema & Padmalatha, 2014). In another study was done in the Pakistan(Hashmi et al., 2007) showed high adherence percentage 77% to antihypertensive drug and in Malaysia similar study results observed 53% of high adherence(Ahmad & Paraidathathu, 2012). This variation may be due to difference in sociodemographic profile of two countries.

In this study the mean age (SD) was 55.6 (±12.3) years; which is not surprising since hypertension is more common among older people. Nasir et al have done a study on adherence to antihypertensive drugs, salt restriction, exercise and control of systemic hypertension in hypertensive patients at Abbottabad – Pakistan (N.Ahmed et al., 2008) found mean age of 55.8±13.4 years of hypertensive patients. The current study shows that, participants who were ≤55yr of age had higher level of treatment adherence compared to those with >55 years of age These results are comparable to those reported from the study done at a tertiary care hospital in Guntur, Andhra Pradesh (Hema & Padmalatha, 2014), which could be due to fact that, they are able to work and thus can afford to buy medication as compared to older people. Another possible reason is that older people might have more than one disease due to aging, which might have led them using many drugs which make them tired, hence, stop taking drugs.

The major strength of this study was a community based study while most the other studies conducted elsewhere were mostly clinic based. The study had been base on short term recall period to reducing recall bias. These self-reported adherence measures are simple and permitting a rapid assessment of medication adherence.

Study showed that higher proportion of non-adherence to medication among people living with hypertension. Provision of essential drugs, improving provider-patient communication and multi-stakeholder approach programme with greater involvement of patients in managing their conditions should be adopted to promote better adherence to whatever medication regime is prescribed. Innovative tools like m-health can improve adherence to treatment in people living with hypertension.

Limitations of the present study are cross sectional study and thus carries all the disadvantages of such design. temporal relation of several factors could not be established. Sample size of study population was small therefore result cannot be generalized to all hypertensive patients of Chandigarh. Self-reported adherence method also tends to overestimate the rate of adherence due to self-desirability bias of the patient.

REFERENCES:

1. Ahmad, N. S., & Paraidathathu, T. (2012). Medication adherence among hypertensive patients of primary health clinics in Malaysia. Dove Press Journal, 6(1), 613–622.
2. Basu, S., & Garg, S. (2017). Methods for estimating medication adherence to antiretroviral therapy: Response to Mehta et al. (2016). Journal of Family Medicine and Primary Care, 6(1), 171–172.
3. Guilbert, J. J. (2003). The world health report 2002 - reducing risks, promoting healthy life. In World Health Organization (Vol. 16).
4. Hashmi, S. K., Afridi, M. B., Abbas, K., Sajwani, R. a, Saleheen, D., Frossard, P. M., … Ahmad, U. (2007). Factors associated with adherence to anti-hypertensive treatment in Pakistan. PloS One, 2(3), e280.
5. Hema, K., & Padmalatha, P. (2014). Original article : Adherence to medication among Hypertensive patients attending a tertiary care hospital in Guntur , Andhra Pradesh. Indian Journal of Basic and Applied Medical Research, 4(1), 451–456.
6. Hyre, A. D., Krousel-Wood, M. a., Muntner, P., Kawasaki, L., & DeSalvo, K. B. (2007). Prevalence and predictors of poor antihypertensive medication adherence in an urban health clinic setting. Journal of Clinical Hypertension (Greenwich, Conn.), 9(3), 179–186.
7. Kusuma, Y. S., & Das, P. K. (2008). Hypertension in Orissa, India: a cross-sectional study among some tribal, rural and urban populations. Public Health, 122(10), 1120–1123.
8. Misra, A., Pandey, R. M., Devi, J. R., Sharma, R., Vikram, N. K., & Khanna, N. (2001). High prevalence of diabetes, obesity and dyslipidaemia in urban slum population in northern India. International Journal of Obesity and Related Metabolic Disorders : Journal of the International Association for the Study of Obesity, 25(11), 1722–1729.
9. N.Ahmed, Khaliq, M. A., S.H.Shah, W.Anwar, Ahmed, N., Abdul Khaliq, M., … Anwar, W. (2008). Compliance to antihypertensive drugs, salt restriction, exercise and control of systemic hypertension in hypertensive patients at Abbottabad. Journal of Ayub Medical College, Abbottabad : JAMC, 20(2), 66–69.
10. Rao, C. R., Kamath, V. G., Shetty, A., & Kamath, A. (2014). Treatment Compliance among Patients with Hypertension and Type 2 Diabetes Mellitus in a Coastal Population of Southern India. Int J Prev Med, 5(8), 992–998.
11. Sharma, S. (2008). Hypertension and cardiovascular disease in South Asia: No end in sight. Journal of the American Society of Hypertension, 2(3), 125–130.
12. United Nation Development Programme(UNDP). (2016). Sustainable Development Goals.
13. Venkatachalam, J., Abrahm, S., Singh, Z., Stalin, P., & Sathya, G. (2015). Determinants of patient s adherence to hypertension medications in a rural population of Kancheepuram District in Tamil Nadu, South India. Indian Journal of Community Medicine, 40(1), 33.
14. World Health Organization. (2005). Preventing Chronic Diseases: a Vital Investment. In World Health Organization(WHO).