



A PROSPECTIVE STUDY TO EVALUATE MEDICATION ADHERENCE AMONG CARDIOVASCULAR PATIENTS IN SCCL MAIN HOSPITAL, KOTHAGUDEM

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ABSTRACT

The study was aimed to determine the adherence of medication taking behaviour and associated factors among the adult cardiovascular patients in SCCL Main Hospital, Kothagudem. To assess the demographic details and to know the Medication Adherence among Cardiovascular patients. An observational prospective interview-based study of 200 adult cardiovascular/hypertensive patients was conducted for a period of six months. Medication adherence measured using an Eight Item Morisky Medication Adherence Scale. Data collected by interview method using structured questionnaire. Data analysed using simple statistical methods (i.e., Mean values, standard deviations, and percentages were used for data representation). Out of 200 cases, 128 were male, 72 were females with the percentages 36% and 64% respectively with cardiovascular disease. Age group 51-60 and 41-50 among males and females were with highest number of cardiovascular diseases with percentages 54.68% and 30.55% respectively compared to all other age categories. In this study, literacy rate was 61% among were illiterates and about 39% of subjects were literates. Number of drugs/day- 0.5% of subjects receives 3 drugs per day, 3% of subjects receive 4 drugs per day, and 96.5% of subjects receive more than 4 drugs. The mean and standard deviation (SD) value for total number of subjects was 40 ± 76.53 . About 72% of subjects are non-alcoholics whereas 28% were alcoholics and about 87% of subjects were non-smokers whereas 13% were smokers. Among 200 cardiovascular subjects, high adherence was found in 27 (24%) patients, moderate adherence was in 125 (62.5%) patients and poor adherence was seen in 48 (13.5%) patients according to the 8-MMAS influenced by age, educational status, number of drugs per day and forgetfulness, alcohol intake and smoking habits. Hence, medication adherence among cardiovascular patients in the present study is moderate.

Key Words:-Medication Adherence, Medication Non Adherence, Morisky Medication Adherence Scale, Interview Based Patient Counselling.

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INTRODUCTION

The aim of the present study was to evaluate Medication Adherence and associated factors among Cardiovascular Disease patients by using clinical data from SCCL, Main Hospital. Medication Adherence is defined as the extent to which a patient's medication-taking behaviour coincides with the intension of the health advice he or she has been given. It is one of the most important factors that determine therapeutic outcomes, especially in patients suffering from chronic illness. Low medication adherence has assumed importance as it seriously undermines the benefits of current medical care and imposes a significant financial

burden on individual patients and the healthcare system as a whole. The term patient 'compliance' was previously used when referring to the medication-taking behaviour of patients. 'Non-compliance' is failure or refusal to comply with advice and can imply disobedience on the part of the patient. Adherence to treatment is the key link between treatment and outcome in medical care (Pardha Saradhi G, Nyfort-Hansen K, 2016). The three things required for patients to adhere to medication regimens include sufficient understanding of the chronic disease and the medications being used to treat it, motivation to take the medication, and implementation of necessary behaviour changes (Richard NH, David AA, 2015). Adherence is extremely important for better therapeutic outcomes, including, replacement therapy, maintenance of pharmacological effect, maintenance of serum drug concentrations to control a particular disorder, some diseases of public health importance where non-adherence is a major obstacle to achieving control, in chronic diseases such as diabetes and hypertension. Factors which have been found in some studies to have no association to patient's medication adherence include age, sex, income, education, ethnicity, patient's intelligence, knowledge about the disease, illness being treated, actual seriousness of disease, actual susceptibility to disease, actual efficacy to treatment, marital status (PardhaSaradhi G, Nyfort-Hansen K, 2016).

An estimated half of patients for whom treatment regimens are prescribed do not follow as directed. Until recently, this was termed "non-compliance", which some regarded as meaning that someone did not follow the treatment directions due to irrational behavior or wilful ignoring of instructions (Marie TB and Jennifer KB, 2011).

Techniques to help patients improve medication adherence include behavioural interventions, motivational interviewing, reward patient success, tailor the regimen, minimize the cost, simplify the treatment regimen, develop a routine, confirm appropriate administration technique, increase attention, use of adherence aids. Strategies to improve the patient-pharmacist relationship include, are friendly and approachable, improve communication skills, take into account spiritual and psychological needs of the patient, improve patient education, encourage patients to discuss their main concerns without interruption or premature closing, give clear explanations, check patient's understanding, negotiate a treatment plan, check patient's attention to medication adherence, simplify the therapeutic regimen, be aware of patient's wishes, involve patient in treatment decisions, involve patient in treatment decisions, involve home support, monitor beneficial effects, monitor side-effects (Pardha Saradhi G, Nyfort-Hansen K, 2016).

Non-adherence with medication is a complex and multi dimensional health care problem. The causes of medication adherence related to the patient, treatment, and/or health care provider. Several interventions may contribute to improved adherence. However, most interventions have only a modest effect. Thus, despite the many efforts made, there has been little progress made as yet in tackling the problem of non-adherence (Jacqueline GH, Lonneke T, 2013).

Building the recent improvements in the prescription of indicated cardiovascular medications is common and is associated with adverse outcomes. Non adherence is not completely a patient problem but is impacted by both care providers and the healthcare system. As the first step towards improving adherence, there needs to be a broader recognition of the problem of non adherence, and once identified, simple strategies should be implemented in daily practicing to a adherence. Certainly, there are still many challenges in further understanding the reasons for non adherence and designing better interventions to improve adherence; however, getting patients to take their medication as prescribed is a goal in order for patients to derive maximal benefit of prescribed therapies and is also highly consistent with one of the institute of medicine's goals of care of patient focused.

MATERIALS AND METHODS

Study Site

The study was carried out at Singareni Collieries Company Limited, Main Hospital, Kothagudem, Bhadradi Kothagudem district, Telangana, India. The present cases were collected from the in and out-patient clinic of General department.

Study Population

A prospective study was conducted on the in-patients and out-patients. Both males and females of age groups above 18 were included for the study.

Data Collection and Analysis

A well planned patient data collection format was used to take all the details of the patient. The cases were collected over a period of 2 months. The study subjects i.e. the general patient population was informed that the information collected would not be revealed to anyone, and assured them that it is a part of academic course only and participant would be their choice. The demographics of the patient were noted. A detailed information regarding the past history of illness, past and present concomitant medications, socio-economic profile, diet, history of the patient were collected upon through patient counselling. Their perception towards self-medication and source of information were also recorded. The medication adherence of cardiovascular patients was checked using Morisky 8-item Medication Adherence Scale questionnaire (Morisky DE, Ang A, Krousel-Wood

M et al., 2008). After collecting the data, the incidence of medication adherence in cardiovascular disease was evaluated.

Ethical issues

Institutional Ethical Committee (IEC) approval was obtained prior to the initiation of the study.

RESULTS

Over 6 months of study conducted at SCCL Main Hospital, out of 200 in and out-patients who have visited the hospital with cardiovascular/hypertensive diseases were taken for the study. From those 200 cases, 128 (64%) were male, 72 (36%) were females [Fig-1]. A general statistics was done on age distribution of CVD patients [Fig-2]. Age group of 51-60 among all the age groups were with highest percentage of population with CVD among both male and female subjects i.e., 90 (45%) [Fig-3]. Effective patient counselling was done in cases

with educational, alcoholic and smoking status and number of drugs per day. About 61% of subjects are illiterates and 39% of them are literates [Fig-4] and about 72% of subjects are non-alcoholics whereas 28% are alcoholics out of 200 subjects [Fig-5] as well as about 87% of subjects are non-smokers whereas 13% are smokers out of total sample size [Fig-6]. About 0.5% of subjects receive 3 drugs per day, 3% of subjects receive 4 drugs per day, and 96.5% of subjects receive more than 4 drugs. The mean and standard deviation (SD) value for total number of subjects was 40 ± 76.53 [Fig-7]. Based on all the mentioned factors, the patient's medication adherence was measured using a standard MMAS-8 Scale. The total score of Morisky Scale was 8 (means high adherence) in 27 (24%) patients, less than 8 to greater than 6 (means moderate adherence) was 125 (62.5%) in patients, less than or equal to 6 (means poor adherence) was in 48 (13.5%) patients [Fig-8].

Table 1. Gender wise distribution of Study Population

S. No	Gender	No. of subjects	Percentage (%)
1.	Males	128	64%
2.	Females	72	36%
	Mean \pm SD	100 \pm 28	-

Table 2. Age wise distribution of Cardiovascular Subjects

S. No	Age (Years)	No. of subjects	Percentage (%)
1.	0-20	0	0
2.	21-30	6	3
3.	31-40	5	2.5
4.	41-50	34	17
5.	51-60	90	45
6.	61-70	29	14.5
7.	71-80	24	12
8.	>80	12	6
	Mean \pm SD	25 \pm 27.11	-

Table 3. Literacy rate of Cardiovascular Subjects during the study period

S. No	Literacy rate	No. of subjects	Percentage (%)
1.	Literates	78	39
2.	Illiterates	122	61

Table 4. Alcoholic status of Study Population

Alcoholic status	No. of subjects	Percentage (%)
Alcoholics	56	28
Non-alcoholics	144	72

Table 5. Smoking status of Study Population

S. No	Smoking status	No. of subjects	Percentage (%)
1.	Smokers	26	13
2.	Non-smokers	174	87

Table 6. Number of drugs per day in Study Population

S. No	No. of drugs/ day	No. of subjects	Percentage (%)
	1	0	0
	2	0	0
	3	1	0.5
	4	6	3
	>4	193	96.5
	Mean \pm SD	40 \pm 76.53	-

Table 7. Frequency of answers to each question of MMAS in Cardiovascular Patients admitted in general department during the study period

Morisky Medication Adherence Scale Questions	Yes	No
Do you sometimes forget to take your medicine?	39 (19.5%)	161 (80.5%)
People sometimes miss taking their medicines for reasons other than forgetting. Thinking over the past two weeks, were there any days when you did not take your medicines.	23 (11.5%)	177(88.5%)
Have you ever cut back or stopped taking your medicine without telling your doctor because you felt worse when you took it?	19 (9.5%)	181 (90.5%)
When you travel or leave home, do you sometimes forget to bring along your medicine?	48 (24%)	152 (76%)
Did you take all your medicines yesterday?	183 (91.5%)	17 (8.5%)
When you feel like your symptoms are under control, do you sometimes stop taking your medicines?	108 (54%)	92 (46%)
Taking medicine every day is a real inconvenience for some people. Do you ever feel hassled about sticking to your treatment plan?	42 (21%)	158 (79%)
How often do you have difficulty remembering to take all your medicine?	Never	167 (83.5%)
	Once in a while	19 (9.5%)
	Sometimes	12 (06%)
	Usually	2 (01%)
	All the time	0 (0)

Table 8. Grade of answers to each question of MMAS in Cardiovascular Patients admitted in general department during the study period

Grade for Questionnaire	Number of subjects	Percentage (%)
Poor	27	13.5
Moderate	125	62.5
High	48	24

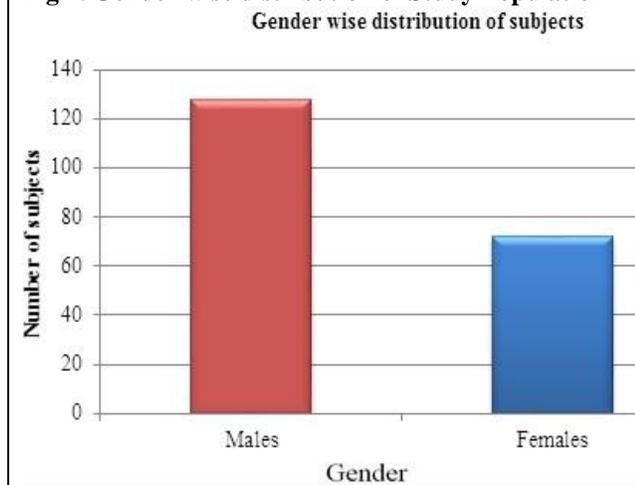
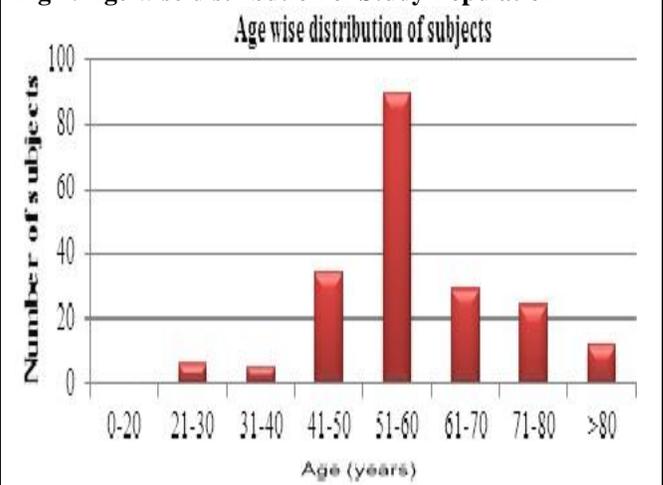
Fig 1. Gender wise distribution of Study Population**Fig 2. Age wise distribution of Study Population**

Fig 3. Literacy rate of Study Population
Literacy rate of Cardiovascular subjects

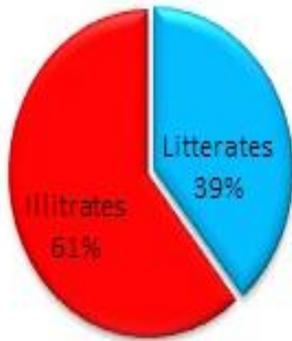


Fig 4. Alcoholic status of Study Population
Alcoholic status of Cardiovascular Patients

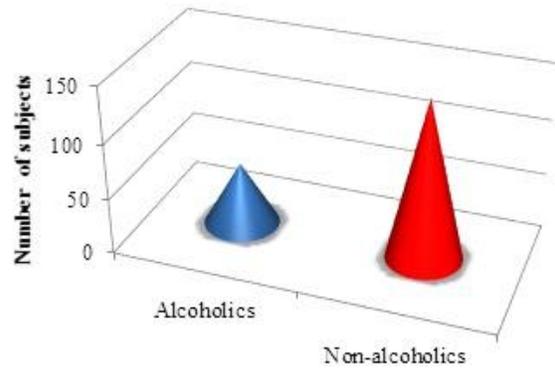


Fig 5. Smoking status of Study Population
Smoking status of Cardiovascular Patients

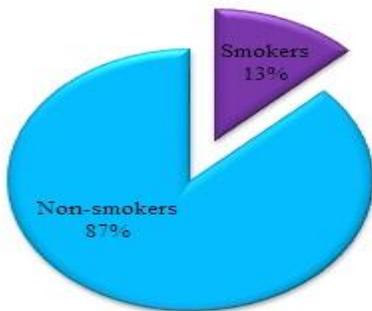


Fig 6. Number of Drugs per day admitted in general department during the study period
Number of Drugs per day in Cardiovascular Patients

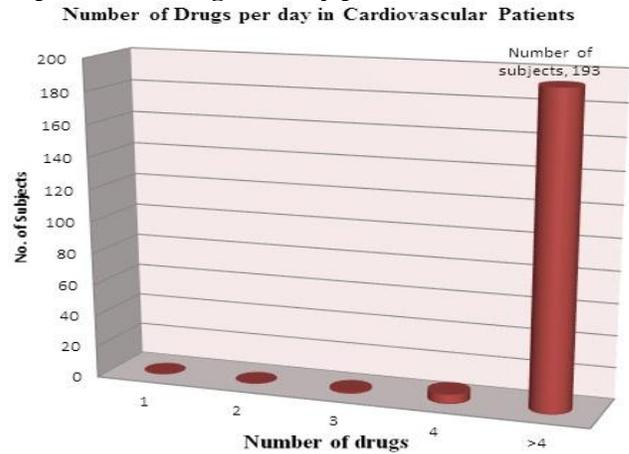


Fig 7. Frequency of Answers to each questions of MMAS in Cardiovascular Patients admitted in general department during the study period
Frequency of Answers to each questions of MMAS

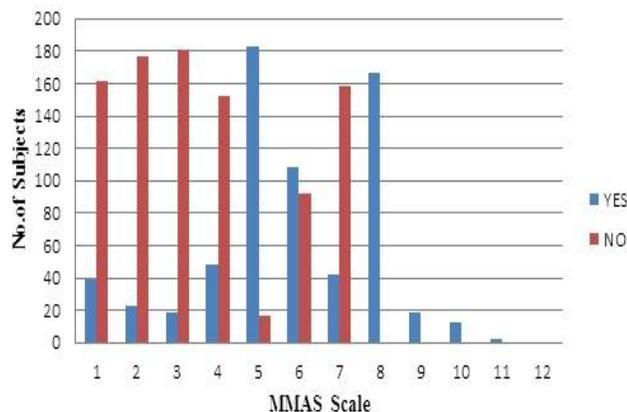
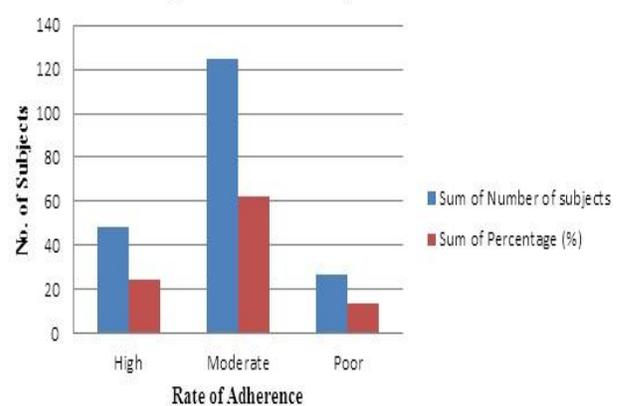


Fig 8. Grading of Answers to each Questions of MMAS in Cardiovascular Patients admitted in general department during the study period
Grading of Answers to each questions of MMAS



DISCUSSION

A total of 200 cases were collected prospectively from in and out patient general medical wards at SCCL main hospital. From those 128 were male, 72 are females. The percentage of females was

36% and the % of males was 64% with cardiovascular disease (Table No.1 & Fig-1). Majority of the patients were from the age group of 51-60 years (Table No.2 & Fig-2). About 61% of subjects were illiterates and about 39% of subjects were literates. Results of literacy rate

among subjects were similar to another study conducted among group of patients with chronic cardiovascular diseases (Fataneh HD *et al.*, 2016). About 72% of subjects were non-alcoholics whereas 28% were alcoholics out of 200 subjects. Results of our study were similar to another study conducted on Adherence to treatment among hypertensives of rural Kerala, India (Arjun B *et al.*, 2018). About 87% of subjects were non-smokers whereas 13% were smokers out of 200 subjects. Results of our study were similar to another study conducted on Adherence to treatment among hypertensives of rural Kerala, India (Arjun B *et al.*, 2018). About 0.5% of subjects receive 3 drugs per day, 3% of subjects receive 4 drugs per day, and 96.5% of subjects receive more 4 drugs. Results of our study were similar to another study conducted by (Fataneh HD *et al.*, 2016). During this prospective study, MMAS questionnaires were prepared, after preparing the questionnaires, we counselled the patients directly during the ward rounds. Among 200 patients, the total score of Morisky Scale was eight (means high adherence) in 27 (24%) patients, less than 8 to greater than 6 (means moderate adherence) was 125 (62.5%) in patients, and less than or equal to 6 (means poor adherence) was in 48

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(13.5%) patients. According to our observational study, the medication adherence among cardiovascular patients in the present study was moderate.

CONCLUSION

The prevalence of drug adherence to cardiovascular diseases was found to be moderate. Medication adherence is a multidimensional behaviour which is affected by different factors such as educational status, number of tablets used per day, forgetfulness. Medication adherence has the key role in treating patient with cardiovascular disease, and it reduces mortality rate, decrease hospitalizations, increase quality of life. Patient education programs are needed for better medication adherence among the patients. It is important to develop strategies for detecting the level of adherence of cardiovascular medicines, barriers involved.

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