



ASSESSMENT AND IMPROVEMENT OF PATIENT MEDICATION ADHERENCE IN GENERAL MEDICAL WARD IN THE TERTIARY CARE TEACHING HOSPITAL

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ABSTRACT

Background: The World Health Organization (WHO) defines adherence as: “the extent to which a person’s behavior-taking medication, following a diet, and/or executing lifestyle changes, corresponds with agreed recommendations from a health care provider. Medication adherence is a growing concern to clinicians, healthcare systems, and other stakeholders (e.g. payers) because of mounting evidence that non-adherence is prevalent and associated with adverse outcomes and higher costs of care. **Materials and Methods:** A hospital based prospective, observational study were conducted in the General Medicine Department and the study was conducted for a

period of six months. Total of 280 patients were selected and enrolled in our study according to Inclusion and Exclusion criteria. We used well designed Morisky 8 scale questionnaire form, patient data collection form, patient counseling form and feedback form were used to collect all required data from study subject to achieve goals of our study. **Results and Discussion:** A total of 280 patients were included as study subject. According to the our study, among major four risk factors majority of the patients were having age risk factor. The highly adherent behavior of patients shown in our study was 167(59.65%). In our study we did interventional study by providing patient counseling to the patient with non-adherence during study period. After receiving patient counseling by study subjects low adherence reduced from 42(15%) to 7(21%) and high adherence increased from 167 (59.64%) to 248(88.57%).

KEYWORDS: Medication Adherence, Non-medication adherence, Patient Counseling.

INTRODUCTION

The World Health Organization (WHO) defines adherence as: “the extent to which a person’s behavior-taking medication, following a diet, and/or executing lifestyle changes, corresponds with agreed recommendations from a health care provider”. Patient’s sub-optimal medication taking behavior with respect to their therapeutic regimen leads to poorer clinical outcomes and quality of life and generates economic loss.^[1] Medication adherence is one of the important factors that determine therapeutic outcomes, especially in patients suffering from chronic illness.^[2] Adherence rate for long-term therapy for chronic illnesses is averages 50% in developed countries and even less in developing countries.^[3] The World Health Organization calls poor adherence a “worldwide problem of striking magnitude.”^[5] Globally, poor adherence costs approximately \$177 billion annually. Non adherence is the cause of 30% to 50% of treatment failures and leads 125,000 deaths annually.^[7] Major reasons for not using medication effectively are due to poor provider-patient communication, inadequate knowledge about a drug and it’s use, having fear of adverse effects of the drug, long term drug regimens, complex regimens that require numerous medications with varying dosing schedules and costs.^[10] Medication adherence is a growing concern to clinicians, healthcare systems, and to other health service provider. There are three major types of non adherence in medication practice include non-fulfillment, non- persistence and non-conforming. Where non-fulfillment or primary medication non-adherence involves delaying or not filling a prescription or filling prescription but never take drugs. Patients who stop taking a medication after starting it, without the advice of a health professional are guilty of non-persistence. Non-conforming involves not taking medications as prescribed-skipping doses, taking medications at incorrect times or at incorrect doses and even taking more than the prescribed dose. The main goals of the present study are to address different methods of measuring adherence, the prevalence of medication non adherence, the association between non adherence and outcomes, the reasons for non adherence and finally interventions to improve medication adherence. Moreover, participation of the pharmacist plays meaningful role to improve medication adherence among patients by providing initial and discharge counseling regarding patient’s medications.

OBJECTIVES

- To assess the medication adherence

- To provide effective patient counselling
- To assess severity of medication adherence
- To educate the patients thereby increase the quality of life
- To measure the medical adherence adopted after counselling

MATERIALS AND METHODS

A Hospital based prospective, observational study were conducted in the General Medicine Department at a tertiary care teaching hospital, Ballari, Karnataka. The study was conducted for a period of six months. Total of 280 patients were selected and enrolled in our study according to the inclusion and Exclusion criteria. We used well structured Morisky 8 scale questionnaire form, patient data collection form, patient counseling form, patient counseling leaflet and feedback form to collect all required data from study subject to achieve goals of our study.

Study Criteria

A) Inclusion criteria

- Patients of all age above 18 years
- Patients of either sex
- Patients who are willing to participate on study

B) Exclusion criteria

- Pediatrics, Infants, Pregnant women & Lactating women
- Patients who are not willing to participate in the study.

Study Procedure

- It is a prospective observational study on patient medication adherence conducted by using medication adherence scale i.e. Morisky 8 scale questionnaire method
- Taken consent from patients individually after obtaining ethical clearance
- All required information has been collected from patient's profile form and from patient by using data collection tools like Morisky 8 scale questionnaire
- Categorized the scoring
- Analyzed the results by using simple standard mean method
- Documented and submitted the report.

RESULTS

A hospital based prospective, observational study was conducted for a period of 6 months among the patients in general medical ward at Vijayanagara Institute of medical sciences, Ballari, Karnataka. A total of 280 patients were enrolled during study period.

Table No. 1: Patient Demographics and Risk Factors Among Study Subjects.

Basic Variables	No. of patients	Percentage (%)
1.Age (years)		
• 18-29	48	17.14%
• 30-39	53	18.92%
• 40-49	71	25.35%
• 50-59	77	27.5%
• 60-69	21	7.5%
• >70	10	3.5%
2. Gender		
• Male	181	64.64%
• Female	99	35.35%
3. Social History		
• Smoker	121	43.21%
• Non-smoker	159	56.78%
• Alcoholic	94	33.57%
• Non-alcoholic	186	66.43%

Table No. 2: Morisky 8 Scale Questionnaire Analysis.

S.No.	Questions	Response (n=280)	
		Yes (%)	No (%)
1.	Do you sometimes forget to take your medicine?	125(44.64%)	155(55.36%)
2.	Thinking over the past 2 weeks, were there any days when you did not take your medicine?	159 (56.79%)	121(43.21%)
3.	Have you ever cut back or stopped taking your medicine without telling your doctor because you felt worse when you took it?	81 (28.92%)	199(71.08%)
4.	When you travel or leave home, do you sometimes forget to bring along your medicine?	72 (25.71%)	208(72.28%)
5.	Did you take all your medicines yesterday?	201 (71.79%)	79(28.21%)
6.	When you feel like your symptoms are under control, do you sometimes stop taking your medicine?	202(72.24%)	78 (27.85%)
7.	Sticking to your treatment plan?	99(35.36%)	181(64.64%)
8.	How often do you have difficulty remembering to take all your medicine?	132 (47.14%)	148(52.86%)

Table No. 3: Distribution of Morisky Medication Adherence Score (MMAS).

Morisky Medication Adherence Score	No. of Patients	Percentage %
>2 (Low adherence)	85	30.36%
1 - 2 (Medium adherence)	117	41.79%
0 (High adherence)	78	27.85%

Table No. 4: Correlation of Morisky Medication Adherence According to Age, Gender and Social History.

Basic Variables	Low adherence (n=85) (>2)	Medium adherence (n=117) (1-2)	High adherence (n=78) (0)
1. Age (years)			
• 18-29	10 (11.76%)	17 (14.53%)	21(26.92%)
• 30-39	13 (15.29%)	20 (17.09%)	20(25.64%)
• 40-49	19 (22.35%)	27 (23.07%)	25(32.05%)
• 50-59	29 (34.12%)	41 (35.04%)	7(8.98%)
• 60-69	11 (12.94%)	7 (5.98%)	3(3.85%)
• >70	3 (3.52%)	5 (4.27%)	2(2.56%)
2. Gender			
• Male	50 (58.82%)	73 (62.39%)	49 (62.82%)
• Female	35 (41.18%)	44 (37.61%)	29 (37.18%)
3. Socio Economic status			
• Smoker	33(41.18%)	63 (53.85%)	25(32.05%)
• Non-smoker	52 (61.18%)	54 (46.15%)	53(62.35%)
• Alcoholic	51 (60%)	30 (25.64%)	13 (16.67%)
• Non-alcoholic	34 (40%)	87 (74.36%)	83(83.33%)

Table No. 5: Pattern of Adherence to Drugs among Study Subjects.

S. No	No. of days with missed dose	Frequency (n=280)	Percentage (%)
1.	0	158	56.42%
2.	1	65	23.21%
3.	2	33	11.79%
4.	3	18	6.43% %
5.	>3	6	2.15%

Table No. 6: Reasons for Non-adherence of Drugs.

S.No	Reason for Non-adherence	Frequency	Percentage (%)
1.	Poor knowledge of disease and ignorance of long term treatment	40	7.77%
2.	Religious beliefs and cultural practices	8	1.55%
3.	Poor communication /insufficient patient information	39	7.57%
4.	Forgetfulness	125	24.26%
5.	Confusion	132	25.63%
6.	Worry about side effects	81	15.73%
7.	Insufficient funds	4	0.78%
8.	Drug out of supply	7	1.37%
9.	Too many drugs	30	5.83%
10.	With food & without food	28	5.44%
11.	Trouble reading pills	21	4.07%

Table No. 7: Medical Condition of Subject.

Disease	Frequency	Percentage (%)
Disease with no co-morbidities	109	38.92%
Disease with co-morbidities	171	61.07%

Table No. 8: Education & Counseling to Promote Adherence to Medication.

Education & counseling	Frequency	%
Counseled patient on the importance of adherence to treatment	202	22.25%
Counseled patient on the need to consult with physician if side effects occurs before deciding to stop dose	81	8.92%
Counseled patient on how to remember all drugs along with frequency	132	14.54%
Counseled about take generic medicine when patient has financial problems	125	13.77%
Aware about medication along with diet	178	19.60%
Aware about dose, route & frequency of medications	190	20.92%

Table No. 9: Distribution of Morisky Medication Adherence Score in Observational Period and Intervention.

MMAS	Observational Period	Intervention Period
Low (<2)	85 (30.35%)	26(9.27%)
Medium (1 – 2)	117(41.79%)	37 (13.21%)
High (0)	78 (27.85%)	217 (77.5%)

RESULTS AND DISCUSSION

Previous studies showed that medication reconciliation performed by clinical pharmacists reduces the rate of drug-related problems at hospital admission. To find out the various reasons for obstacles which causing non-medication adherence among the patients. We

conducted our study by enrolling 280 patients from general medicine ward, who fulfill our study criteria as the main purpose to enhance medication adherence among the study subjects. According to our study, among major four risk factors majority of the patients were having age risk factor. By the collected data we found that 50-59 years age group patients were more 77 (27.5%) as compare to remaining age groups. In our study, 181(64.64%) male and 99(35.35%) female were enrolled. Among them, total smokers were 121(64.64%) and non-smokers were 159(56.78%). Above study is similar with the study conducted by Kumar VH *et al.*^[2] Our study shows, highly non-adherent behavior of patients with low adherence were 85(30.36%), medium adherence 117(41.79%) and high adherence 78(27.85%). Which shows that similarity with the study conducted by Khotkar K *et al.*^[3] In our study, Main reason for non-adherence was “confusion 132(25.63%) and forgetfulness 125(24.26%). Similar study was conducted by Pirasath S. *et al.*, where shows forgetfulness were main reason for non-adherence.^[11] In our study we did interventional study by providing patient counseling to the patient with non-adherence during study period. After giving patient counseling to study subjects number of low adherence reduced from 85(30.35%) to 26(9.27%), medium adherence reduced from 117(41.79%) to 37(13.21%) and high adherence increased from 78 (27.85%) to 217(77.5%). Similar interventional study was conducted by Leguelinel-Blache G *et al.*^[4] Patient having disease with co-morbidities included high in number in our study. Our study shows that we need to enhance medication adherence in the real-life by monitoring patient effectively on patient’s medication, risk factors, disease and provide effective counseling by clinical pharmacist and other health care system.

CONCLUSION

As the patient medication non adherence is a major medical problem globally, which is due to lack of awareness and knowledge about disease, drugs and it’s uses. To enhance medication adherence among the patients, needed to educate the patients, community about awareness of medication. Our study concludes that patient medication adherence was increased from 78(27.85%) - 217 (77.5%) by efforts of the clinical pharmacist and by providing patient counseling.

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List of Abbreviations

S.No.	Abbreviation	Expansion
1.	WHO	World health organization
2.	MMAS	Morisky medication adherence score

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