Research Article

Medication Non-Adherence in Chronic Disease Patients: A Cross-Sectional Study

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ABSTRACT

Background: A major healthcare concern is pharmaceutical non-adherence, especially in chronic disorders where adherence rates are frequently lower than for acute conditions. After the first six months of treatment, adherence usually decreases, particularly for diseases with dormant phases or those without symptoms.

Methods: According to a prospective observational cross-sectional study that involved 312 chronic illness patients at Adichunchanagiri Hospital in Karnataka, using a predesigned questionnaire. the appropriate statistical methodology was used to determine the sample size. The overall findings and differences were analysed by transformed data into SPSS statistics version 25.

Results: in our study 63.41% of individuals engaged in purposeful non-adherence, whereas 16.22% did not. According to the Medication Adherence Rating Scale (MARS), forgetfulness (76%), carelessness (59.6%), and running out of medication (26.6%) were the most common categories. According to the Beliefs About Medicines Questionnaire (BMQ), 60.3% of respondents were worried about the long-term consequences of their prescription, even though 60.6% of respondents said life would be impossible without it. Chronic illnesses such as diabetes (77.6%), liver disease (76.5%), lung disease (75%), and hypertension (77.2%) were most prone to non-adherence.

Conclusion: The results highlight the complexity of non-adherence, with forgetfulness and a lack of comprehension emerging as key contributing variables. Targeted interventions like patient education and regular follow-up are crucial to enhancing adherence. Through collaborative care, healthcare professionals especially pharmacists play a critical role in removing these obstacles and enhancing patient outcomes.

Keywords: Medication non-adherence, Chronic disease, Intentional, Adherence.

INTRODUCTION

Non-adherence to chronic diseases is long-term health conditions that last longer than three months and can adversely impact health and quality of life. [1] The World Health Organization (WHO) estimates that approximately 50% and 76.3% of patients living in developed, respectively, and developing countries do not take their medications as prescribed. Only 23.7% patients in India adhere to medication. The rates of medication non-adherence are between 10% to 92%, and increasing through the years.[2]

Medication non-adherence can be intentional and unintentional. About 15% of patients do not fill new prescriptions, and 50% quit therapy altogether. Intentional non-adherence includes actions such as ceasing medicine without first talking to a healthcare provider or not filling a new prescription. The percentage of unintentional non-adherence varies from 20% to more than 50%. [3] Unintentional non-adherences may involve more than just forgetfulness or carelessness, according to recent research.[4]

It comprises several factors, including those connected to the patient, illness, condition, social and economic circumstances, and the health system. Numerous studies have demonstrated a connection between patients' beliefs in medications and adherence in chronic illness. Better patient experiences with current and previous care have also been linked to higher adherence rates in chronic disease. Since the clinical teams' patient-centred approach can change patients' attitudes and experiences, both are significant.[5]

The prevalence of long-term health conditions is high and rising with an aging population, it is widely cited that up to 50% of medication are not taken as prescribed, these rates vary considerablyacross different treatment and conditions and even with conditions based on the definitions and measurement of non-adherence.[6]

Two useful instruments for evaluating patients' attitudes about medicine is the Beliefs About Medicines Questionnaire (BMQ) and Medication Adherence Rating Scale (MARS). Treatment-related beliefs, motivation, and knowledge all have an impact on purposeful non-adherence. Unintentional non-adherence is frequently associated with demographic characteristics, especially age, but it can also be influenced by self-efficacy, ideas about sickness and medication, and other factors. Understanding these elements enables medical professionals to customize treatments to enhance adherence and promote improved condition management.[7]

There for, the purpose of the study is to determine the factors associated with intentional and unintentional non-adherence medication along with prevalence of patients.

METHODOLOGY

The department of pharmacy practice of Adichunchanagiri hospital carried out a prospective observational cross-sectional study at general medicines department. the study took place for six months in hospital in B. G. Nagara, Nagamangala taluk, Mandya district, Karnataka.

The study protocol was presented before the institutional ethical committee (IRC)and consent was obtained after considering inclusion criteria (The patients in medicine department of Adichunchanagiri Hospital and Research Centre who are willing to participate and answer the predetermined questionnaires prepared in English and local language (Kannada) as well, Age above 18 years old) and exclusion criteria (The participants are not interested in the study, Age below 18 years old).

To collect data, a self-administered questionnaire was employed by using a data collection form. The questionnaire adopted are validated. The study involved 312 participants in total.

A predesigned questionnaire was asked face to face to the participants and filled. data was entered in a Microsoft excel sheet systematically. categorical data was analysed. statistics were taken out in percentages for all the variables using SPSS statistics version 25.

RESULTS

312categorized by age 18–29 (9.69%), 30–39 (15.70%), 40–49 (17.60%), 50–59 (21.20%), and 60–69 (35.70%). Of the participants, 42.60% are female and 57.40% are male. In terms of education, 18.90% of participants have a degree, 15.70% are illiterate, 33.30 percent have only completed basic school, and just 32.10% have completed secondary school.33.70% of individuals were unemployed, while 66.30% were employed .In terms of income level, 78.80% had a medium income, 14.1% had a poor income, and 7.10% had a high income.3.80% of participants were divorced, 89.10% were married, and 7.10 percent were single.28.50% of participants were company owners, 15.40% were farmers, 31.10% were housewives, and 25.00% were professionals .Chronic conditions included 57.4% lung disease, 42% liver disease, 79.2% hypertension, and 79.2% diabetes in table 1.

Among the participants, 61.50% skipped doses to extend the duration of their treatment,59.90% Skipped doses because did not think medication was helping and stopped taking medication because felt better, 59.00% took less medication because they felt better in table 2 and figure 1.

Table 1: Demographic details

		N	%
Age (Years)	18-29	30	9.60%
	30-39	49	15.70%
	40-49	55	17.60%
	50-59	66	21.20%
	60-69	112	35.90%
Gender	Female	133	42.60%
	Male	179	57.40%
Education Level	Graduate	59	18.90%
	illiterate	49	15.70%
	Primary	104	33.30%
	Secondary	100	32.10%
Employment Status	Employed	207	66.30%
	Unemployed	105	33.70%
Income Status	High	22	7.10%
	Low	44	14.10%
	Medium	246	78.80%
Marital Status	Divorced	12	3.80%
	Married	278	89.10%
	Single	22	7.10%
Occupation	Business	89	28.50%
	Farmer	48	15.40%
	Homemaker	97	31.10%
	Professional	78	25.00%
Disease	Diabetes	246	78.80%
	Liver disease	132	42.30%
	Pulmonary disease	196	62.80%
	Hypertension	246	78.80%

Medication Adherence Rating Scale

Intentional Medication Non-adherence

Table 2: Intentional Medication Non-Adherence

Questionnaires	Answer	N	%
1. Skipped doses to make medication last longer	No	120	38.50%
	Yes	192	61.50%
2. Took smaller doses to make medication last longer	No	150	48.10%
	Yes	162	51.90%
3. Altered dose of medication to suit own needs	No	129	41.30%
	Yes	183	58.70%
4. Stopped taking medication because felt worse	No	135	43.30%
	Yes	177	56.70%
5. Took less medication because felt better	No	128	41.00%
	Yes	184	59.00%
6. Skipped medication because felt worse	No	142	45.50%
	Yes	170	54.50%
7. Skipped medication because felt better	No	130	41.70%
	Yes	182	58.30%
8. Stopped medication because did not think it washelping	No	139	44.60%
	Yes	173	55.40%
9. Took less medication because felt worse	No	130	41.70%
	Yes	182	58.30%
10. Stopped taking medication because felt better	No	125	40.10%
	Yes	187	59.90%
11. Skipped doses because did not think medication washelping	No	125	40.10%
	Yes	187	59.90%

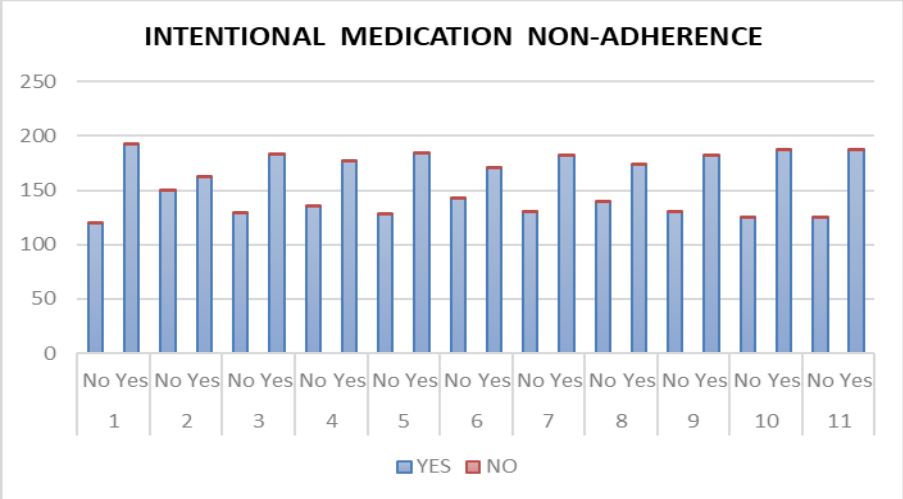

Figure 1: Intentional Medication Non-Adherence

Unintentional Medication Non-adherence

Table 4: Unintentional Medication Non-Adherence.

Questionnaires	Answer	N	%
1. Ever forget to take medication	No	75	24.00%
	Yes	237	76.00%
2. Ever run out of medication	No	229	73.40%
	Yes	83	26.60%
3. Careless of taking medication	No	126	40.40%
	Yes	186	59.60%

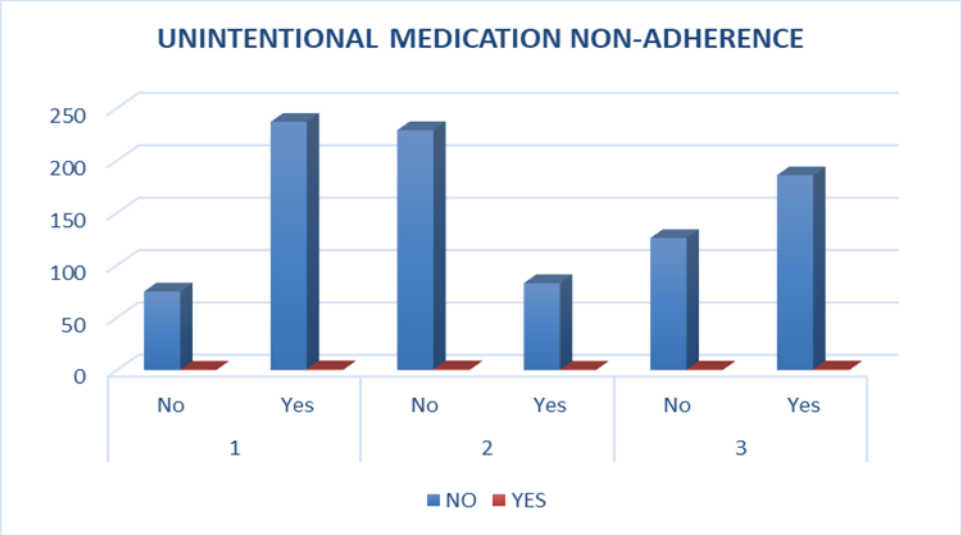

Figure 2: Unintentional Medication Non-Adherence

Table 4 and figure 2 shows participants 76.00% forget to take medication respectively.

BELIEFS ABOUT MEDICINES QUESTIONAIIRE(BMQ)

TABLE 5: Belief about medicines questionnaire.

Questionnaires	Answer	N	%
1. My health, at present, depends on these medicines	Agree	179	57.40%
	Disagree	34	10.90%
	Neutral	38	12.20%
	Strongly Agree	58	18.60%
	Strongly Disagree	3	1.00%
2. Having to take medicines worries me	Agree	178	57.10%
	Disagree	52	16.70%
	Neutral	51	16.30%
	Strongly Agree	29	9.30%
	Strongly Disagree	2	0.60%
3. My life would be impossible without these medicines	Agree	189	60.60%
	Disagree	43	13.80%
	Neutral	41	13.10%
	Strongly Agree	36	11.50%
	Strongly Disagree	3	1.00%
4. I sometimes worry about long-term effects of thesemedicines	Agree	189	60.60%
	Disagree	39	12.50%
	Neutral	47	15.10%
	Strongly agree	32	10.30%
	Strongly disagree	5	1.60%
5. Without these medicines I would be very ill	Agree	179	57.40%
	Disagree	51	16.30%
	Neutral	47	15.10%
	Strongly Agree	30	9.60%
	Strongly Disagree	5	1.60%
6. These medicines are a mystery to me	Agree	158	50.60%
	Disagree	59	18.90%
	Neutral	66	21.20%
	Strongly Agree	21	6.70%
	Strongly Disagree	8	2.60%

7. My health in the future will depends on thesemedicines	Agree	179	57.40%
	Disagree	58	18.60%
	Neutral	38	12.20%
	Strongly Agree	30	9.60%
	Strongly Disagree	7	2.20%
8. These medicines disrupt my life	Agree	171	54.80%
	Disagree	68	21.80%
	Neutral	42	13.50%
	Strongly Agree	26	8.30%
	Strongly Disagree	5	1.60%
9. I sometimes worry about becoming too dependent onthese medicines	Agree	187	59.90%
	Disagree	59	18.90%
	Neutral	33	10.60%
	Strongly Agree	27	8.70%
	Strongly Disagree	6	1.90%
10. These medicines protect me from becoming worse	Agree	188	60.30%
	Disagree	62	19.90%
	Neutral	33	10.60%
	Strongly Agree	23	7.40%
	Strongly Disagree	6	1.90%
11. This medicine gives me unpleasant side effects	Agree	173	55.40%
	Disagree	64	20.50%
	Neutral	47	15.10%
	Strongly Agree	24	7.70%
	Strongly Disagree	4	1.30%

In BMQ scale questionnaires my life would be impossible without these medicines were 60.60% agree,43(13.80%) disagree,41(13.10%) neutral, 36(11.50%) strongly agree and 3(1.00%) strongly disagree. Q4 were 189(60.60%) agree,39(12.50%) disagree, 47(15.10%) neutral, 32(10.30%) strongly agree and 5 (1.60%) strongly disagree, I sometimes worry about long-term effects of these medicines 189(60.60%) agree, 39(12.50%) disagree, 47(15.10%) neutral, 32(10.30%) strongly agree and 5 (1.60%) strongly disagree in table 5.

Prevalence Of Medication Non-adherence

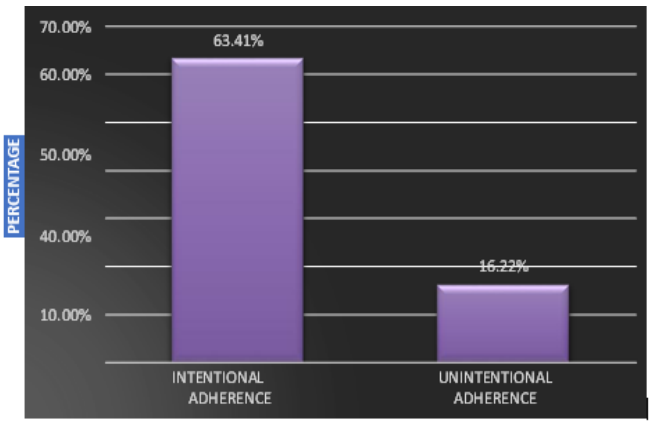

Figure 3: Prevalence of intentional and unintentional medication non adherence.

Out of 312 participants 63.41% are intentional medication non adherence and 16.22% are unintentional medication non adherence in figure 3.

DISCUSSION

Nearly 58.1% were males and 30.7% were females, according to Manuel Torres-Gutierrez et al., which is similar to our study participants ,majority of participants were male 57.7% followed by 42.3% female.[8] Out of 312 ,9.6% fall under 18-29 age group,15.7% fall under 30-39 age group,17.9% fall under 40-49 age group,21.2%fall under 50-59 age group,35.6% fall under 60-69 age group.79.2% comes under hypertension, 79.2% comes under diabetes, 57.4% comes under pulmonary diseases and 42% liver diseases .How ever study conducted by Abdel Qader A1 Bawab et al .,to assess the factors associated with non-adherence in chronic patients. [9]

Majority are primary 33.3% followed by secondary 31.7%, graduate 19.2%, illiterate 15.7%. How ever in a study conducted by Khulud Alosaimi et al., assess basic education 50%, undergraduate 50%.[10]

In our study showed that 66.3% were unemployed and 33.7% were employed, homemaker 31.10%, business 28.50%, professional 25.00%, farmer 15.40% like the results, a comparative study was conducted by Linda Bouwman et al., assess unemployment 21.2%, employment 27%

homemaker 31.10%, business 28.50%, professional 25.00%, farmer 15.40 %. [11]In our study low income 14.1%, medium 78.8%, high 7.1% and in marital status married 89.10%, single 7.10%, divorced 3.80% like the results to a study conducted by Abdel Qader Bawab et al., assess income as low 70.4%, intermediate 69.3%, high 57.9%, married 89.10%, single 7.10%, divorced 3.80%.[9]

The intentional medication non adherence was 63.41% and unintentional medication non adherence 16.22% like the results to a study conducted by Manuela Huber et al., intentional medication non adherence was 63.41% and unintentional medication non adherence 16.22%.[12]

In our study 57.40% were think like there health , at present depend on these medicines,57.10% were agree having to take medicines worries them,60.60% though like there life would be impossible without this medicines and sometimes worry about long term effects these medicines,57.40% without these medicines thy will be very ill,50.60% thinks like medicines are a mystery to them ,57.40% their health in future will depends on this medicines,54.80% thinks like that medicines disrupt their life,59.90% sometimes worry about becoming too dependent on these medicines,60.30% medicines protect them from becoming worse,55.40% medicines gives them unpleasant side effects similar study was done by Dimitrijević I,et al.[13]

The age distribution and gender ratio in our study are consistent with previous research indicating a higher prevalence of chronic diseases in older adults. Educational background and employment status show some variations compared to studies by Khulud Alosaimi et al.,[14] and Linda Bouwman et al.,[15]. The differences could be attributed to regional variations in education and employment opportunities. The high rate of intentional non-adherence observed in our study is in line with findings from Dimitrijevic I et al.,[13]. This suggests that intentional non-adherence remains a significant concern among chronic disease patients, often driven by perceptions about medication efficacy and side effects. Unintentional non-adherence rates, such as forgetfulness and carelessness, are also consistent with previous research, highlighting the need for strategies to improve medication reminders and patient education.

Limitation

It is a study done fixed period (6 months). It could have been extended for longerperiod includes only inpatients admitted in medicine department carried out only in Adhichunchanagiri Hospital. The patients were not willing to participate; they were excluded from the study.

CONCLUSION

The study concluded that many of the patients are intentional and adherent. The findings highlight the various factors contributing to non-adherence, such as forgetfulness, lack of understanding. It is evident that addressing these barriers through targeted in improving medication adherence and ultimately enhancing patient outcomes. Addressing this issue requires a multifaceted approach that involves healthcare providers, patients, and caregivers working together to develop personalized strategies for medication management. By addressing the root causes of non-adherence and providing education and support, healthcare providers can help empower patients to take control of their health and better manage their chronic conditions. However, the study significantly improves patient care.

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