

EVALUATION OF MEDICATION ADHERENCE IN GASTROINTESTINAL PATIENTS OF DISTRICT HYDERABAD, PAKISTAN

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DOI: <https://doi.org/10.5281/zenodo.18052384>

Keywords

Evaluation, non-adherence,
gastrointestinal, Hyderabad

Article History

Received: 27 October 2025

Accepted: 12 December 2025

Published: 25 December 2025

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Abstract

Background: Gastrointestinal complications are significant community health problem and are worldwide prevalent. It establishes single worldwide cause of morbidity and mortality. Adherence is the degree to which the person agreed recommendations. Adherence is considered as a number one problem in chronic conditions.

Methodology: A total of 300 patients were enrolled via purposive sampling with confirmed diagnosis of gastrointestinal disturbance from the duration of July 2018 to July 2019. All patients were interviewed regarding their disease and therapy and a structured questionnaire was asked to be fill by the patients.

Results: A total of 300 patients were interviewed among which male patients (n = 171) were more in number than female patients (n = 129). Maximum number of patients were enrolled from RHC Tando Jam i.e. 39%, while 28% enrolled from RHC Tando Qaiser followed by 33% from RHC Hoosri. A large ratio of patients fall between the ages of 36-54 years i.e. 51%, (n=153) while diminutive ratio of patients fall between the ages of 18 to 24 years. In account of noncompliance, 37% patient were found with dose missed, among which dominant factor was the prompt response of the medication was the major contributor for the noncompliance. Whereas 18% were thinking for change the medication. Around 17% patients were fail to take medication as per direction of doctor due to language barrier and About 22% patients were found to show irregularity for their routine visits, however 39% patients found with poor adherence and discontinued their treatment out of which 19% cases was due to early satisfaction where as 4% was because of duration of therapy and remaining were 3% and 1% left the medication because of lack of follow up and lack of education respectively.

Conclusion: Study concluded that the major contributing factor was noncompliance which interrupted the patient health.

INTRODUCTION

Gastrointestinal complications are significant community health problem and are worldwide prevalent. It establishes single worldwide cause of morbidity and mortality. The occurrence is supposed to be high in developing countries like Pakistan probably due to poor sanitary conditions and improper personal hygiene. Several studies shows that Gastrointestinal tract produces various diseases like GERD, IBS, IBD, ulcer etc. with prominent symptoms of Heart burning, bloating and stomach pain. Adherence is the degree to which the person's behavior corresponds with the agreed recommendations from a health care provider. Adherence is considered as a number one problem in chronic conditions [1-3].

Gastrointestinal disorders are more common disorders, accountable for approximately 7-10% of total visits of hospital. These are high prevalent throughout the world and more than sixty percent population of world suffer from common problem of stomach such as acidity, irritable bowel movement, gastro-esophageal reflux, etc [4, 5].

These are the common gastrointestinal disorders in which gastrointestinal tract (GIT) looks abnormal and also work improperly. These disorders mostly affect the entire GIT. In most of the cases structural gastrointestinal disorders are managed by medicines, whereas in few cases surgery is required to restore the normal function of GIT [6, 7].

Different studies reported that approximately 50% of patients does not follow the physician instructions, resulting in failure as well as cost of therapy [8].

In case of persistent disease sufferers are not habitual to get medicine on regular basis which shows the deprived results and consider it financial burden on the society. Now it is necessary to build up sturdy relation linking with health professional along with individual, furthermore address them about importance of obedience [9].

Discontinuation of the treatment produces the worst conditions for victims along with the health related focal person. Moreover, facts rope the

idea that obstructions may decline the quality of the adherence for the victims well for the health care supporter [10].

Aims of this study are to estimate the gastrointestinal medication noncompliance level of patients within rural health care centers and to assess the aspects that disturb on noncompliance of patients with gastrointestinal medication.

MATERIALS AND METHODS

Study design

A descriptive observational study was conducted at three selected primary health care centers Hyderabad.

A total of 300 Patients were enrolled via purposive sampling from the duration of July 2018 to July 2019 that was diagnosed with gastrointestinal disease.

All patient interviewed regarding their disease and therapy and a structured questionnaire asked to fill by the patients to determine the factors associated with treatment of Gastrointestinal including patient characteristics, the relationship between health care provider and patient, the treatment regimen and the health care settings.

Inclusion Criteria

- Outdoor patients of age from 18 - 60 years included in this study which can respond easily.

Exclusion criteria

- All unconscious patients who cannot respond questioner.
- Patients having HIV-AIDS, Hepatitis B and C, and Cancer were considered as exclusion criteria.

Sampling method

A total of 300 patients were enrolled which was the approximate induction of new and old confirmed cases of patients that can possibly be obtained within the study period.

Study patients were enrolled via purposive sampling (non-probability sampling).

Study duration

Study duration was July 2018 to July 2019.

Sample collection area

Sample of study were collected from

- Rural Health Centre of Tando Jam
- Rural Health Centre of Tando Qaiser
- Rural Health Centre of Hoosri

Study tools

A predesigned questionnaire for the assessment of adherence of Gastrointestinal patients was used to record patient’s disease history, habits, medication regimen and grievance and necessary information.

Informed verbal consent was obtained from all patients participated in the study.

The study was approved by scrutiny committee of Board of Advanced Studies and Research (BASR), University of Sindh, Jamshoro, Pakistan. Evaluation of the Medication Adherence in

Gastrointestinal Patients at Rural Health Care Centers of Hyderabad, Sindh.

Statistical analysis

All data was analyzed by Microsoft Excel and statistical software, IBM SPSS Statistics version 22.

RESULTS

Study conducted between the period July 2018 to July 2019, during the research 300 patients were enrolled from three different hospitals of Hyderabad district, among them majority of the sufferers (39%) registered from the Rural health center, where as remaining portion of the patients participated from the Rural health centre Tando Qaiser and Rural health centre Hoosri (28% and 33% as given in) (Table 1).

Table 1: Patient Enrolled from Health Care Centers

S/No	Name of Hospital	No: of Patients	Percentage %	Cumulative %
1	Rural Health Centre Tando Jam	117	39%	39%
2	Rural Health Centre Tando Qaiser	84	28%	67%
3	Rural Health Centre Hoosri	99	33%	100%
Total		303	300	100%

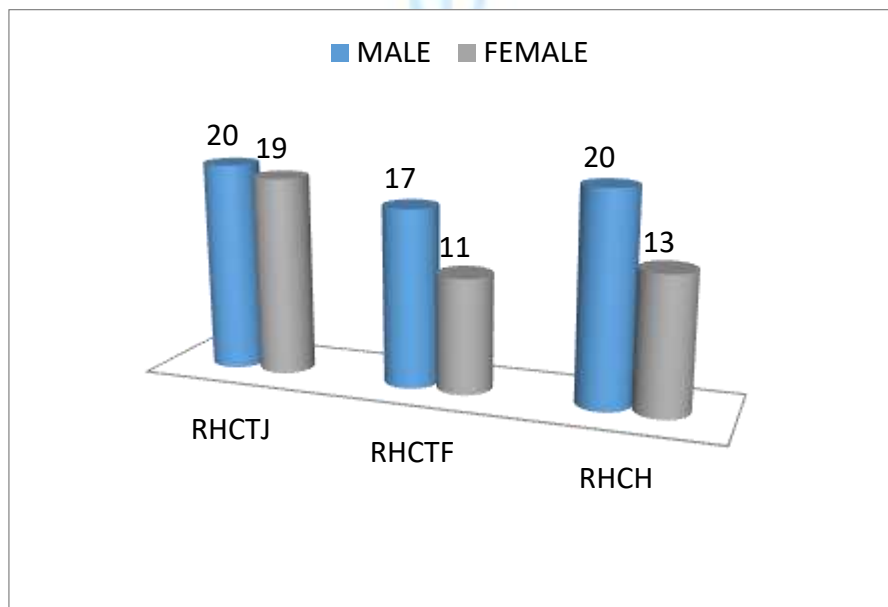


Figure 1: Gender Wise Enrolled Patient

Figure 1 shows that among the 300 patients, major contribution of the male patients which were 171 around 57%.

- *Rural Health Centre Tando Jam
- * Rural Health Centre Tando Qaiser
- * Rural Health Centre Hoosri

Figure 2 shows the age of the patients. Out of 300 patients mainstream of the tolerant (51%) were fall between the ages of 35 to 54 years, whereas diminutive portion of the sufferers (12%) belong to productive age (18 to 24 years) of the life.

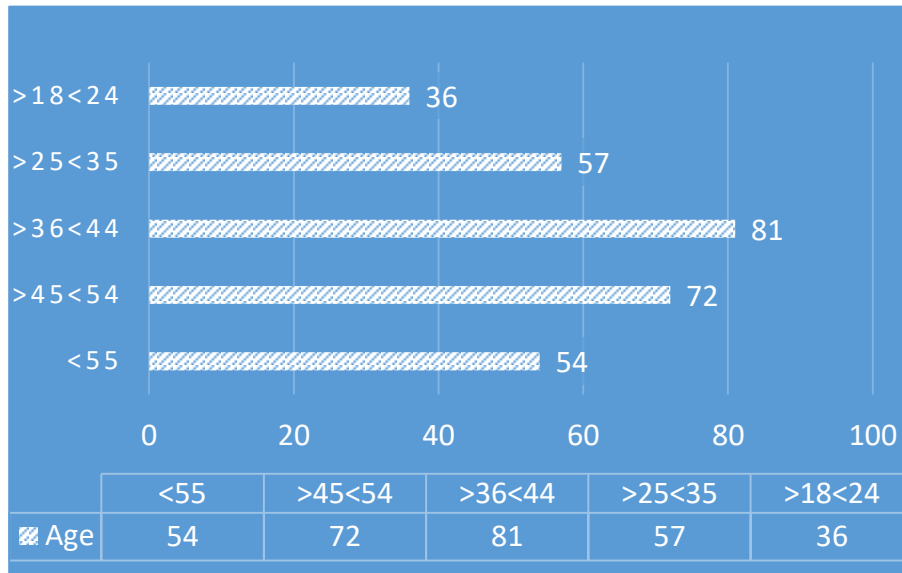


Figure 2: Age Wise Enrolled Patients

Figure 3 shows that majority of Patients 40% reported with fullness and bloating followed by burning and stomach pain 36%, whereas Diminutive part of patients was attached with the sign of heart burn.

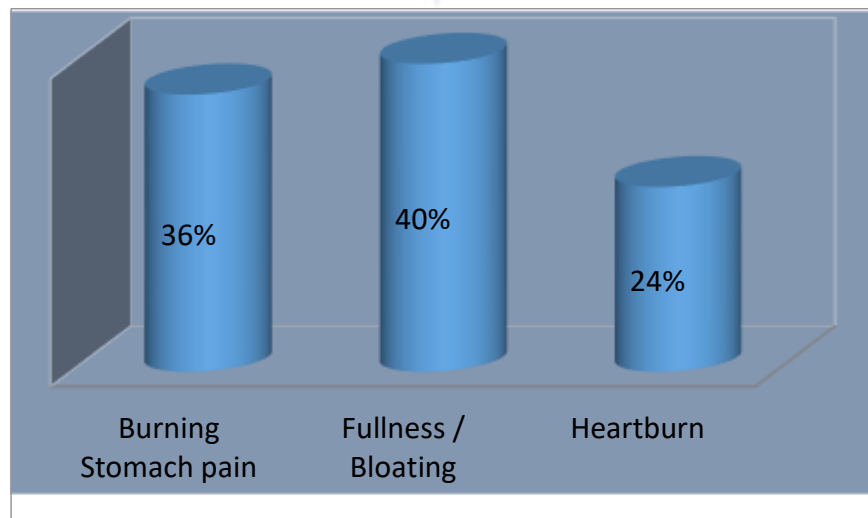


Figure 3: Common Signs and Symptoms in Enrolled Patients

Table 2 focuses on the adherence rate as per Health Facility which clearly indicated that adherence rate of RHC Tando Jam is much better 19% as compared to other hospitals.

Table 2: Adherence and Non-adherence in Enrolled Patients in Hospitals

Hospital	Adherence	Frequency	Percentage	Overall Adherence
RHC T.Jam (OUT OF 117)	Adherence	57	48.7%	19%
	Non-adherence	60	51.3%	20%
RHCT.Qaiser (OUT OF 84)	Adherence	30	35.7%	10%
	Non-adherence	54	64.3%	18%
RHC Hoosri (OUT OF 99)	Adherence	36	34.6%	12%
	Non-adherence	63	63.6%	21%

Table 3 shows the different reasons of non-adherence in 59% of patients towards management of disease. Majority of the patients (49.7%) reported the early satisfaction with drug for non-adherence followed by duration of therapy (23.7%), lack of follow up (15.3%) and lack of proper counseling (11.3%).

Table 3: Reasons of Non-adherence During The Therapy

Reasons	Frequency	Percentage (%)
Early Satisfaction	88	49.7%
Duration of Therapy	42	23.7%
Lack of Follow up	27	15.3%
Lack of Proper Counseling	20	11.3%
Total	177	100%

Table 4: Statistical analysis of non-adherence reasons

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.811 ^a	6	.992
Likelihood Ratio	.817	6	.992
Linear-by-Linear Association	.014	1	.907
N of Valid Cases	177		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.10.

DISCUSSION

Present evaluation highlighted that masculine sufferers remained more projecting to contribute in the investigation about 57%, whereas the feminine linked slowly 43%, which discovered that male sex is strongly cooperative as shown in

Figure 1. In a study authors too embattled the enormous population of the male gender almost 64% whereas the opposite gender females were small in size as shown in figure i.e. 34%. Likewise, mainstream of the patients i.e. 46%

were in age range of 24-44 years, whereas same pattern was followed by other comparative study and enrolled majority (50%) of the tolerant in age range of 20-40 years [10-12].

Current study describes the different evidence or reasons of negligence in taking medications at appropriate time or following proper instructions.

Survey found significant portion (18%) of the patients as defaulter. Among which 6% of the patients leave the treatment due to prolong treatment, whereas 4% of the patients leave the treatment due to early satisfaction. However, remaining patients leave the treatment due to follow up irregularity and low level of literacy. While, some studies mentioned in their assessment and categorized that 37% were found defaulter and being were treated again [13-15].

CONCLUSION

Among 300 patients enrolled for the purpose of this complete study 39% (n=117) patients showed non-adherence while 61% (n=183) patients were complying as per therapy regimen prescribed by their health care practitioner. Male ratio towards non-adherence was more comparatively to the female. Similarly, patient counseling is a key factor to contribute in patient compliance. Pharmacist role in perusing patient's compliance was also very important.

REFERENCES

1. Naqvi AA, Hassali MA, Rizvi M, Zehra A, Iffat W, Haseeb A, et al. Development and validation of a novel General Medication Adherence Scale (GMAS) for chronic illness patients in Pakistan. *Front Pharmacol.* 2018;9:1124. doi:10.3389/fphar.2018.01124.
2. Shaheen H, Haq N, Riaz S, Naseem A, Zarak MS. Assessment of medication adherence among non-communicable chronic disease patients in Quetta, Pakistan: predictors of medication adherence. *Asian J Med Health.* 2017;4(4):1-9. doi:10.9734/AJMAH/2017/34300.

3. Abbas A, Kachela B, Arif JM, Tahir KB, Shoukat N, Ali NB. Assessment of medication adherence and knowledge regarding the disease among ambulatory patients with diabetes mellitus in Karachi, Pakistan. *J Young Pharm.* 2015;7:328-340. (Referenced in Naqvi et al.)
4. Morisky DE, Ang A, Krousel-Wood M, Ward HJ. Predictive validity of a medication adherence measure in an outpatient setting. *J Clin Hypertens (Greenwich).* 2008;10(5):348-354.
5. Al-Hajjaj MS, Khan MA, Alkhateeb FM. Factors affecting gastrointestinal medication adherence: a cross-sectional study. *Int J Clin Pharm.* 2017;39(4):734-742.
6. Nguyen GC, LaVeist TA, Harris ML, Silverberg MS. Impact of socioeconomic status on medication adherence in inflammatory bowel disease. *Am J Gastroenterol.* 2017;112(10):1504-1512.
7. Kane S, Huo D, Aikens J, Hanauer SB. Medication nonadherence and the outcomes of patients with inflammatory bowel disease. *Am J Med.* 2016;129(8):754-760.
8. Osterberg L, Blaschke T. Adherence to medication. *N Engl J Med.* 2005;353(5):487-497.
9. Garcia-Rodríguez A, Castro M, Pedersen N, et al. Non-adherence to immunomodulator and biologic therapy in inflammatory bowel diseases. *J Crohns Colitis.* 2016;10(7):794-801.
10. Vermeire S, Pepinster P, Kerstens R, et al. The impact of gastrointestinal adverse events on medication adherence in patients with chronic GI disorders. *Clin Gastroenterol Hepatol.* 2018;16(2):219-226.
11. Jackson CA, Clatworthy J, Robinson A, Horne R. Factors associated with non-adherence to oral medication in inflammatory bowel disease. *Curr Med Res Opin.* 2016;32(3):587-594.

12. Van Hecke A, Vermeire S, Rutgeerts P, et al. The impact of disease perception on medication adherence in gastrointestinal patients: a European multicenter study. *Dig Dis Sci.* 2017;62(5):1429-1437.
13. Kane S, Shaya FT, Grossman S, et al. Economic burden and medication adherence patterns in ulcerative colitis patients. *Inflamm Bowel Dis.* 2016;22(4):895-901.
14. Tiao DK, Nguyen GC. Health literacy and medication adherence in chronic GI disease management. *Gastroenterol Hepatol (N Y).* 2017;13(6):341-349.
15. Van der Have M, Oldenburg B, Kaptein AA, et al. Psychosocial factors predict medication adherence in chronic inflammatory bowel disease. *Gastroenterology.* 2018;154(2):S-12.

