Journal of Neonatal Surgery
ISSN(Online): 2226-0439
Vol. 14, Issue 5 (2025)
https://www.jneonatalsurg.com

OPEN ACCESS

Correlation between Illness Presentations and Treatment Adherence among Insulin-Dependent Diabetic Patients at District Head Quarter Hospital Sheikhupura

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Cite this paper as: Shazia Yousaf, Dr. Saqib Rabbani, Dr. Samina Kausar, Farah Naz, (2025) Correlation between Illness Presentations and Treatment Adherence among Insulin-Dependent Diabetic Patients at District Head Quarter Hospital Sheikhupura. *Journal of Neonatal Surgery*, 14 (5), 388-397.

ABSTRACT

Background: Diabetes mellitus, particularly type 1 diabetes, poses a significant global health challenge due to its chronic nature and the necessity for lifelong insulin therapy. Medication adherence is crucial in managing glycemic levels and preventing complications; however, patients' perceptions of their illness can strongly influence adherence behaviors. Understanding the relationship between illness presentations and treatment adherence can inform targeted interventions to improve patient outcomes

Objective of Study

1. To ascertain the extent of association between individuals with insulin-dependent diabetes's self-reported treatment adherence and their views about their illness.
2. To assess how insulin-dependent diabetics view themselves and how well they comply to their treatment regimen.

Methodology: This study aimed to examine the correlation between self-reported medication adherence and illness presentations among patients with type 1 diabetes mellitus. A correlational study design was employed, involving 115 patients aged 18 to 36 years, attending the outpatient diabetic clinic at DHQ Hospital Sheikhupura. Convenience sampling was used to select participants who met the inclusion criteria. Data were collected using a structured questionnaire comprising demographic information, the Revised Illness Perception Questionnaire (IPQ-R), and the 8-item Morisky Medication Adherence Scale (8-MMAS). Statistical analysis was conducted using SPSS version 26, with correlation analysis performed to explore relationships between variables.

Results indicated that 67% of patients exhibited low medication adherence, with a mean MMAS score of 4.78 ± 1.61. A weak negative correlation was found between medication adherence and illness identity as well as treatment control perceptions, while no significant correlation existed between adherence and other illness presentations domains. These findings suggest that patients' beliefs about their condition and treatment influence adherence behaviors.

Conclusion: It addressing illness presentations through tailored psychoeducational interventions could enhance medication adherence and self-management in type 1 diabetes patients. Future research with larger, randomized samples and objective adherence measures is recommended to further elucidate these relationships and improve diabetes care outcomes.

1. INTRODUCTION

Diabetes mellitus (DM) is a chronic metabolic disorder characterized by persistent hyperglycemia due to impaired insulin secretion, insulin action, or both (World Health Organization (WHO), 2023). Insulin-dependent diabetes mellitus (IDDM), or type 1 diabetes, typically develops in younger individuals and requires lifelong insulin therapy (Khan et al., 2019). If left untreated, it can lead to severe complications, including diabetic ketoacidosis, kidney failure, neuropathy, cardiovascular disease, and retinopathy (Saha et al., 2020). As the global prevalence of diabetes continues to rise especially in low- and middle-income countries it has become a critical public health issue (WHO, 2023).

Effective management of type 1 diabetes heavily relies on patients' adherence to insulin therapy, dietary regulation, physical activity, and blood glucose monitoring. Despite medical advancements, treatment adherence remains a significant challenge, with nearly 50% of patients failing to take their medications as prescribed (Jimmy & Jose, 2011; Świątoniowska-Lonc et al., 2021). Poor adherence is linked to suboptimal glycemic control and a higher risk of diabetes-related complications (Shiyanbola et al., 2018). Barriers such as emotional distress, complex medication regimens, low health literacy, and socioeconomic factors often contribute to poor adherence (Bussel et al., 2017).

Illness presentations, or how individuals cognitively and emotionally view their condition, is a key psychological factor that influences adherence (Leventhal's Common-Sense Model; Blondie et al., 2021). Patients who perceive their illness as uncontrollable or untreatable are more likely to exhibit low adherence, while those with more positive, constructive beliefs tend to better manage their condition (Li et al., 2022). Factors such as education, income, and emotional support also shape these perceptions, ultimately influencing self-care behaviors such as medication use, diet, and glucose monitoring (Aloudah et al., 2018).

This study seeks to explore the relationship between illness presentations and treatment adherence among young adults with insulin-dependent diabetes. By examining how patients' beliefs about their illness affect their adherence behaviors, this research aims to identify modifiable psychological and social factors. The findings can contribute to improved patient education and tailored interventions, ultimately promoting better health outcomes in this high-risk population (Li et al., 2020; WHO, 2023).

This study is significant because it enhances the understanding of how medication adherence and illness presentations influence the management of diabetes mellitus, particularly among patients dependent on insulin. By examining patients' beliefs and behaviors related to their treatment regimens, the research highlights key factors that affect glycemic control across diverse demographic groups. The findings can inform policy makers in developing effective strategies to reduce diabetes-related morbidity and mortality by addressing both patient-centered and broader social, organizational, and healthcare system challenges. Additionally, the study provides valuable insights for healthcare professionals to design tailored interventions and support systems that meet the specific needs of insulin-dependent diabetic patients, ultimately improving adherence and health outcomes especially within the Pakistani population.

Objective of Study

1. To ascertain the extent of association between individuals with insulin-dependent diabetes's self-reported treatment adherence and their views about their illness.
2. To assess how insulin-dependent diabetics view themselves and how well they comply to their treatment regimen.

2. RESEARCH METHODOLOGY

This study employed a correlational research design to examine the relationship between treatment adherence and illness presentations among insulin-dependent diabetic patients. Conducted at the Sheikhupura's DHQ Hospital, the study targeted 115 type 1 diabetes patients aged 18 to 36 years, with at least one year of disease history. Convenience sampling was used to select participants who met the inclusion criteria, ensuring the sample size was statistically justified with a 90% power and 5% significance level. Data were collected using a structured questionnaire comprising demographic information, the Revised Illness Perception Questionnaire (IPQ-R), and the Morisky Medication Adherence Scale (8-MMAS). Ethical approval was obtained, and participants provided informed consent, with confidentiality and participant dignity strictly maintained throughout the study process.

Data analysis was performed using SPSS version 26. Descriptive statistics summarized demographic characteristics, while correlation analysis assessed the association between medication adherence and illness perceptions. A 100% response rate was achieved, and significance was set at a p-value of less than 0.05. The study's methodology ensured rigor and ethical compliance, providing reliable insights into how patients' beliefs about their illness influence their adherence to insulin therapy. These findings have potential implications for developing targeted interventions and healthcare policies aimed at improving diabetes management outcomes.

3. RESULTS

Table 4.1: Age distribution of study Participants

	Frequency	Percent
18-23 Years	22	19.1%
24-28 Years	28	24.3%
29-33 Years	26	22.6%
34-38 Years	39	33.9%
Total	**115**	**100%**

In this study 115 patients were included. Age of patients in this study ranges between 18-38 years. Among patients 22(19.1%) were in age group 18-23 years, 28(24.3%) patients were in age group 24-28 years, 26(22.6%) patients were in age group 29-33 years and 39(33.9%) patients were in age group 34-38 years.

Table 4.2: Gender distribution of study Participants

	Frequency	Percent
Male	38	33%
Female	77	67%
Total	**115**	**100%**

Among patients 38(33%) patients were male and 77(67%) were female. Female patients were higher in number as that of male patients.

Table 4.3: Educational status of study Participants

	Frequency	Percent
Illiterate	6	5.2%
Primary	21	18.3%
Secondary	88	76.5%
Total	**115**	**100%**

The educational status of patients showed that 6(5.2%) were illiterate, 21(18.3%) patients had primary level education and 88(76.5%) patients had secondary level education.

Table 4.4: Occupational status of study Participants

	Frequency	Percent
Employed	53	46.1%
Unemployed	62	53.9%
Total	**115**	**100%**

Occupational status of patients showed that 53(46.1%) patients were employed and 62(53.9%) patients were unemployed.

Table 4.5: Martial status of study Participants

	Frequency	Percent
Married	18	15.7%
Unmarried	97	84.3%
Total	**115**	**100%**

Marital status of patients showed 18(15.7%) patients were married and 97(84.3%) patients were unmarried.

Table 4.6: Socioeconomic status of Study Participants

	Frequency	Percent
Lower	9	7.8%
Middle	106	92.2%
Total	**115**	**100%**

Socioeconomic status of patients showed that 9 (7.8%) patients belong to lower and 106(92.2%) belong to middle class.

Table 4.7: Residential status of study participants

	Frequency	Percent
Urban	84	73%
Rural	31	27%
Total	**115**	**100%**

Residential status of patients showed that 84(73%) belong to urban area and 31(27%) belong to rural areas.

Table 4.8: Family History of diabetes Mellitus

	Frequency	Percent
Yes	104	90.4%
No	11	9.6%
Total	**115**	**100%**

Among patients 104(90.4%) had family history of diabetes.

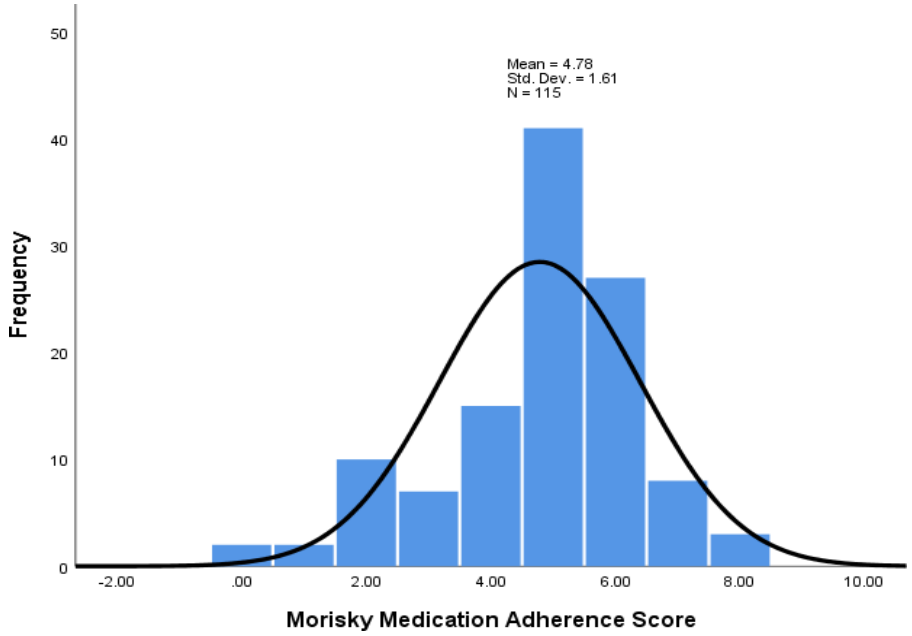
Table 4.9: Symptoms experienced by Study participants

	All the time		Frequently		Occasionally		Never		Total
	N	%	n	%	N	%	n	%	
Pain	47	40.87 %	33	28.70 %	35	30.43 %	0	0.00%	**115**
Nausea	1	0.87%	1	0.87%	36	31.30 %	77	66.96 %	**115**

Breathlessness	3	2.61%	22	19.13%	74	64.35%	16	13.91%	**115**
Weight Loss	0	0.00%	2	1.74%	48	41.74%	65	56.52%	**115**
Fatigue	14	12.17%	61	53.04%	35	30.43%	5	4.35%	**115**
Stiff Joints	18	15.65%	38	33.04%	29	25.22%	30	26.09%	**115**
Sore Eyes	1	0.87%	16	13.91%	49	42.61%	49	42.61%	**115**
Headache	1	0.87%	14	12.17%	78	67.83%	22	19.13%	**115**
Upset Stomach	0	0.00%	2	1.74%	65	56.52%	48	41.74%	**115**
Sleep Difficulties	1	0.87%	29	25.22%	41	35.65%	44	38.26%	**115**
Dizziness	1	0.87%	25	21.74%	35	30.43%	54	46.96%	**115**
Loss of Strength	30	26.09%	41	35.65%	28	24.35%	16	13.91%	**115**

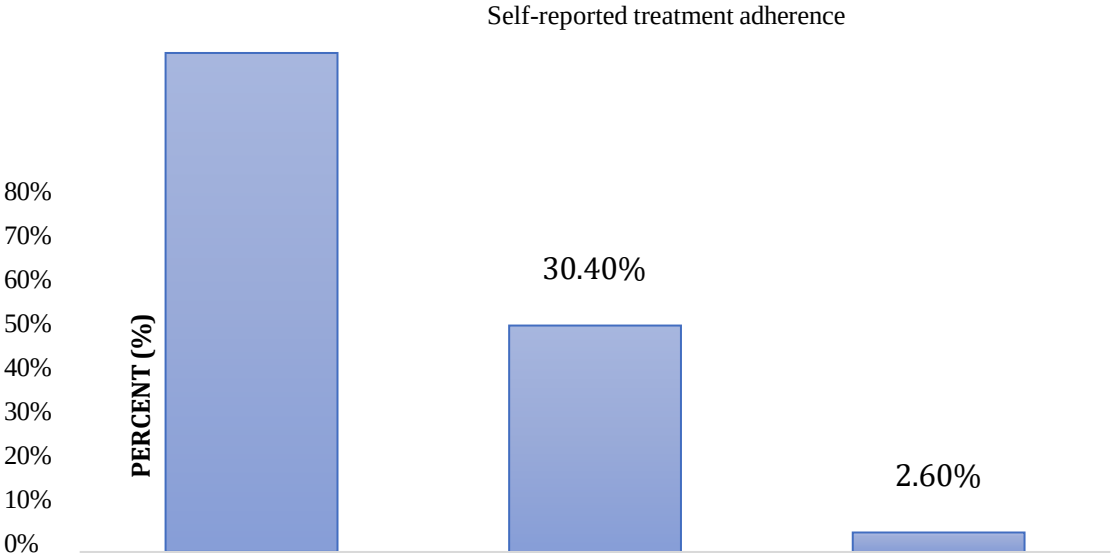
Patient were asked about difference symptoms they experienced and their frequency. The highest frequency of symptom experienced by all-time reported by the patient were pain followed by loss of strength, stiff joints and fatigue. Among frequency experienced symptoms the highest frequency was reported by fatigue, loss of strength, stiff joints, pain and sleep difficulties. However, among occasionally experienced symptoms the most frequent symptoms were headache followed by breathless ness, upset stomach, sore eyes and weight loss.

Figure 1: histogram for Morisky Medication Adherence Score (8-MMAS)



Above histogram shows the morisky medication adherence score. Mean morisky medication adherence score for patients was 4.78±1.61.

Figure 2: Self-reported treatment adherence among study Participants



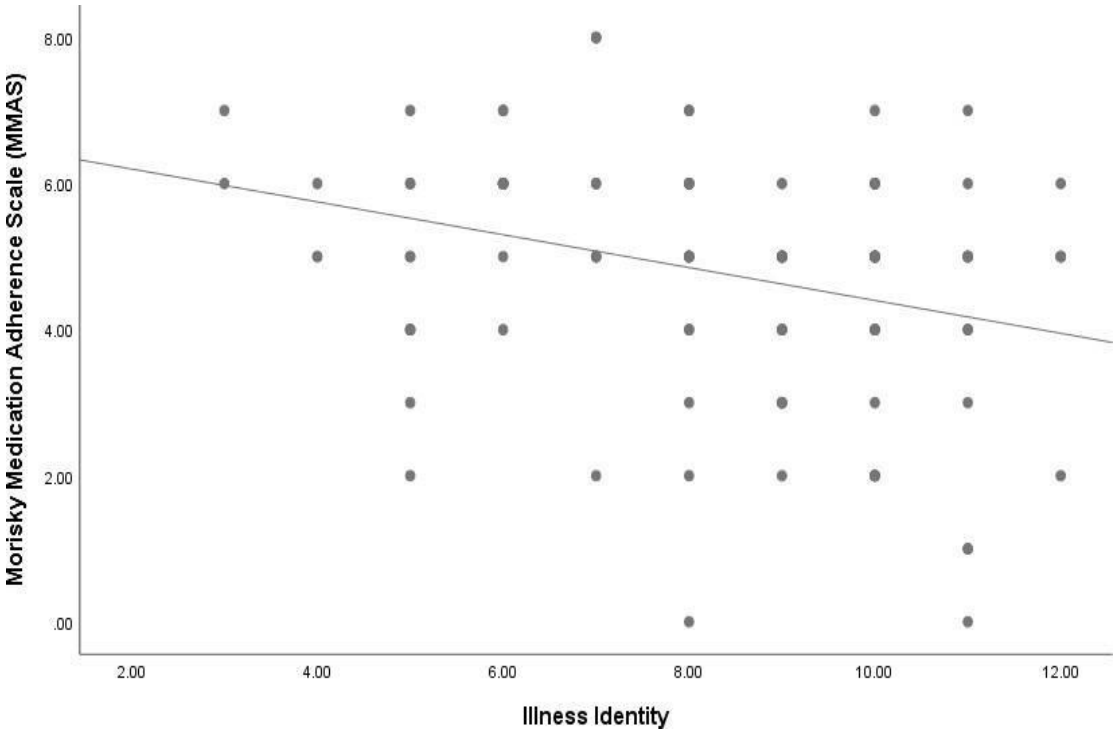
Above graphs shows self-reported treatment adherence among patients based on morisky medication adherence score. Based on this score 67% patients had low adherence, 30.40% had medium adherence and 2.60% patients had high adherence.

Table 4.10: The Revised Illness Perception Questionnaire (IPQ-R) domains score

	Illness Identity	Consequences	Control/Cure	Timeline	Cause
N	**115**	**115**	**115**	**115**	**115**
Mean	8.30	22.90	21.57	12.72	28.95
SD	2.20	3.42	1.42	0.97	3.08
Min	3	0	14	8	23
Max	12	27	25	14	36

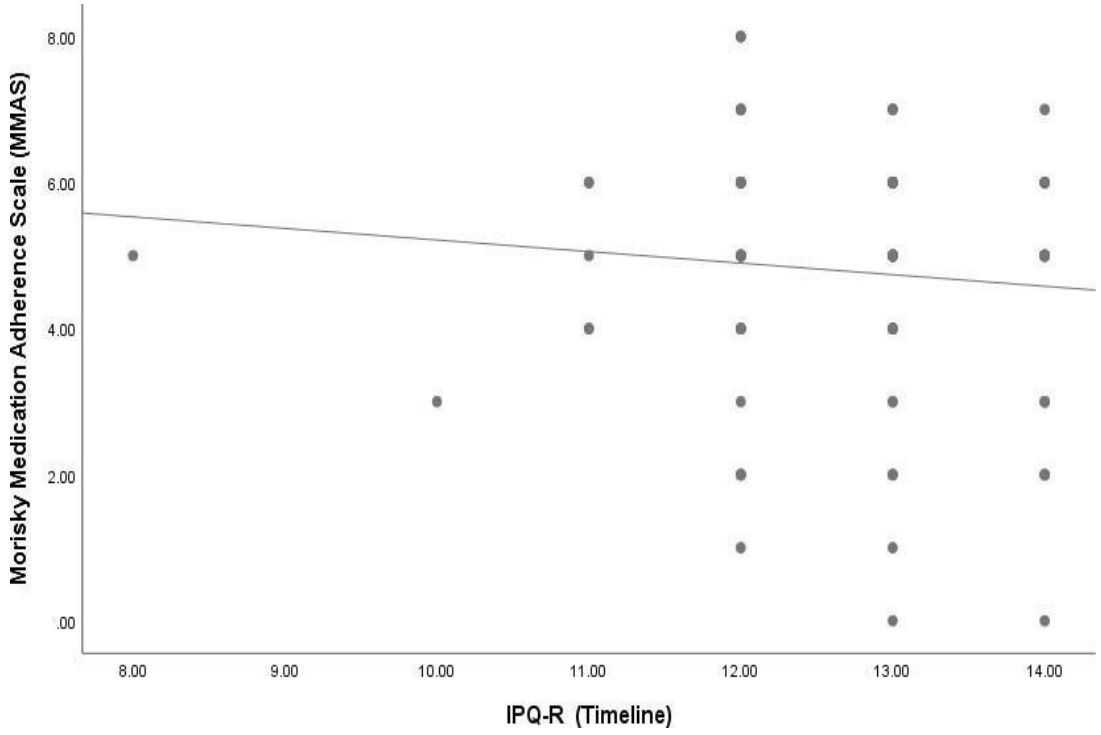
Above table describes the revised illness presentations questionnaire domains. For illness identity domain mean score was 8.30±2.20. For consequences domain mean score was 22.90±3.42. For control/care domain mean score was 21.57±1.42 and for timeline domain mean score was 12.72±0.97. For causes domain mean score was 28.95±3.08.

Figure 3: Scatter plot between Illness identity score (IPQ-R) with Morisky Medication Adherence score



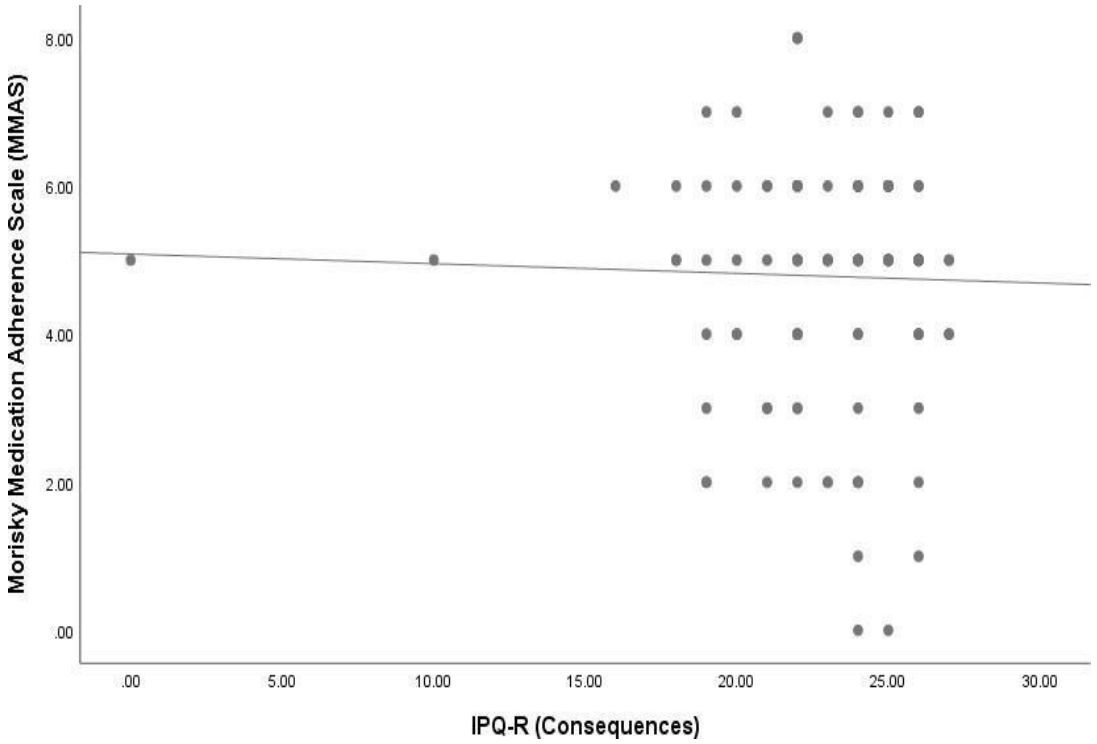
Above scatter plot shows correlation between Illness identity domain score with MMAS score. Weak negative correlation

Figure 4: Scatter plot between Timeline score (IPQ-R) with Morisky Medication Adherence score



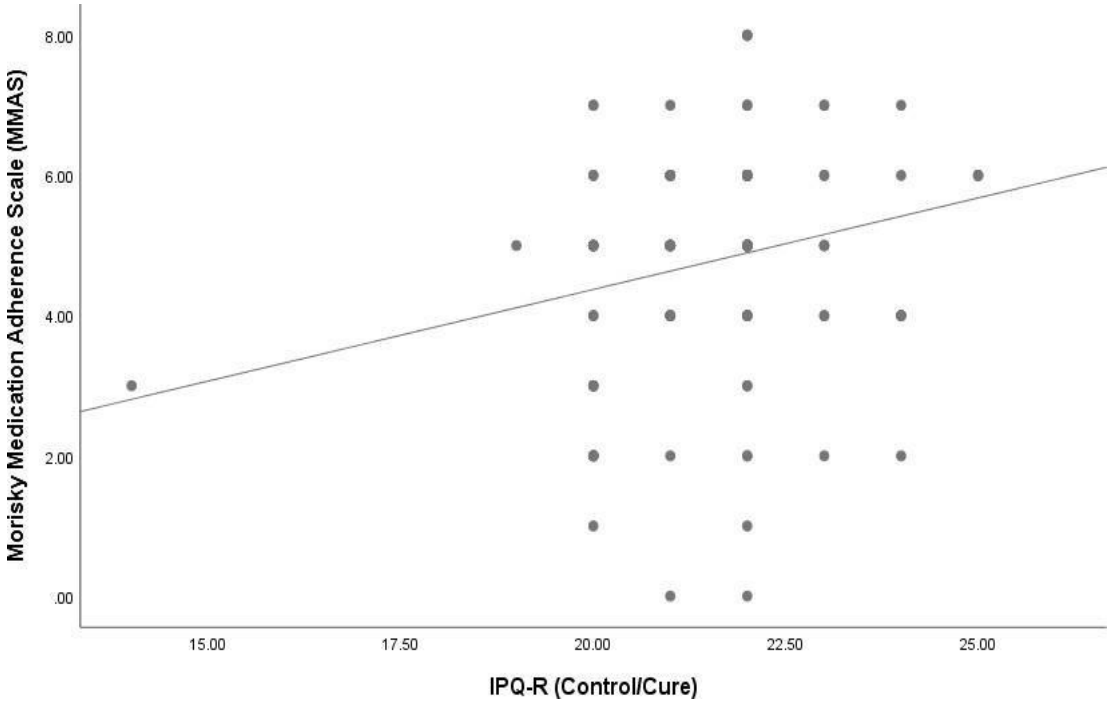
Above scatter plot shows correlation between timeline domain score with MMAS score No significant correlation does exist between MMAS score and timeline score. i.e. r= -0.095, p-value=0.311

Figure 5: Scatter plot between Consequences score (IPQ-R) with Morisky Medication Adherence score



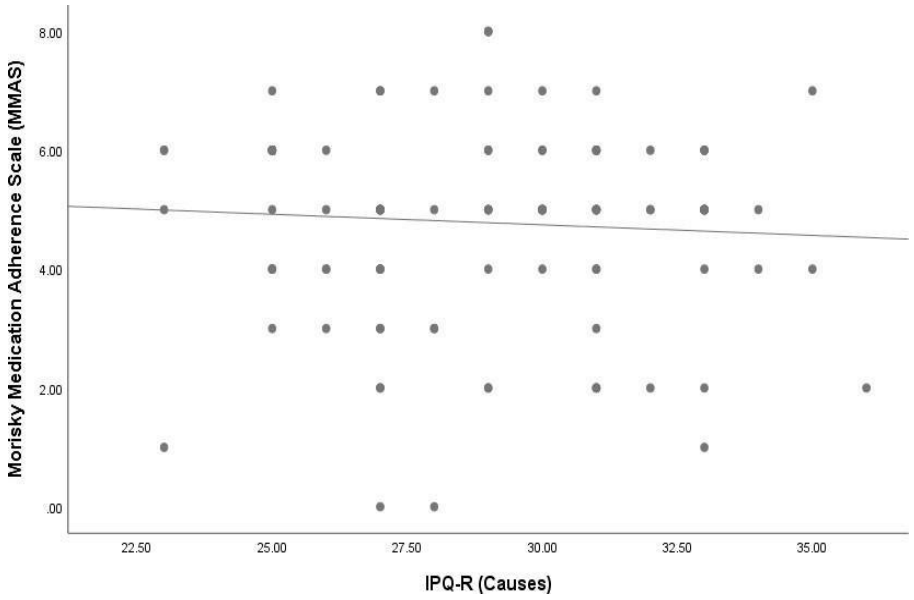
Above scatter plot shows correlation between consequences domain score with MMAS score. No significant correlation does exist between MMAS score and consequences domain score. i.e. r= -0.028, p-value=0.769

Figure 6: Scatter plot between Control/Cure score (IPQ-R) with Morisky Medication Adherence score



Above scatter plot shows correlation between control/care domain score with MMAS score. Weak positive significant correlation does exist between control/cure score with MMAS score. i.e. r=0.230, p-value=0.013

Figure 7: Scatter plot between Causes (IPQ-R) with Morisky Medication Adherence score



Above scatter plot shows correlation between causes domain score with MMAS score. No significant correlation does exist between causes score with MMAS score. i.e. r= -0.068, p-value=0.472

4. DISCUSSION

This study underscores the important relationship between illness presentations and medication adherence among patients with type 1 diabetes mellitus. A substantial portion of the participants (67%) demonstrated low adherence to their insulin regimen, which aligns with findings from Siddiqi et al. (2023), who reported similar adherence challenges in diabetic populations. The weak negative correlation between medication adherence and illness identity and treatment control suggests that patients who perceive greater control over their illness and treatment are more likely to adhere to prescribed regimens. These findings are consistent with previous research indicating that positive beliefs about treatment efficacy and personal control improve diabetes self-management and glycemic outcomes (Fortenberry et al., 2014; Tajima et al., 2023).

The study's demographic results showed a female predominance in contrast to several studies reporting higher incidence and prevalence of type 1 diabetes among males, especially in the 15-34 years age group (Östman et al., 2008; Parviainen et al., 2022). This discrepancy may be influenced by socio-cultural factors affecting healthcare access, disease perception, and health-seeking behaviors, as highlighted by Shiyanbola and Nelson (2011), who emphasized the role of cultural and familial responsibilities, particularly for women, in medication adherence. Understanding these socio-cultural nuances is critical for designing targeted interventions that address the unique barriers faced by different patient subgroups.

Symptom patterns reported in the current study, such as pain and fatigue, align with typical clinical presentations of type 1 diabetes documented in the literature (Katsarou et al., 2017). However, the study found no significant correlation between adherence and certain illness perception domains such as timeline and consequences, echoing mixed evidence in the field (Ashur et al., 2015; Eshete et al., 2023). Importantly, beliefs about the chronicity of diabetes and the perceived effectiveness of treatment have been identified as modifiable factors that can be leveraged through psychoeducational strategies to improve medication adherence and overall disease management.

This research adds to the growing body of evidence suggesting that interventions focusing on patients' illness perceptions could lead to better adherence and improved health outcomes. However, limitations such as convenience sampling and cross-sectional design restrict the ability to infer causality and generalize findings. Future studies should consider longitudinal methodologies and objective adherence measures, such as electronic monitoring, to enhance data reliability and understanding of the causal pathways between illness perceptions and adherence behaviors. Overall, integrating psychological and socio-cultural factors into diabetes care is essential for optimizing treatment adherence and reducing disease complications.

5. CONCLUSION

In conclusion, the study underscores the significant role that illness perceptions play in shaping treatment adherence among patients with type 1 diabetes. While a large proportion of patients demonstrated low adherence to their insulin regimen, the findings highlight the potential for improving adherence through addressing patients' beliefs about their condition and treatment. Tailored interventions that focus on enhancing disease understanding, treatment control, and emotional responses

could foster better self-management practices. Ultimately, improving medication adherence can lead to better glycemic control, reduced complications, and improved quality of life for individuals with type 1 diabetes.

6. LIMITATION OF STUDY

This study has few limitations which are as follows:

1. This was a single center study.
2. One limitation of the study is its reliance on self-reported data, which may be subject to bias or inaccuracies.
3. The sample size of this study was not large enough keeping in mind the duration of study and approval by the UHS
4. Type-II diabetic patients were not included in this study
5. The findings of this study cannot be generalized for the whole diabetic patients population as data was collected from a specific area which did not gives a true representation of whole diabetic population

No information regarding Gestational diabetes for women was record in this study

REFERENCES

[1] Aloudah, N. M., et al. (2018). *Impact of patients' perception on diabetes self-management.*

[2] Blondie, R., et al. (2021). *Cognitive illness representation in chronic disease.*

[3] Bussel, J. B., et al. (2017). *Barriers to treatment adherence in chronic illness.*

[4] Jimmy, B., & Jose, J. (2011). *Patient medication adherence: Measures in daily practice*. *Oman Medical Journal*, 26(3).

[5] Khan, M., et al. (2019). *Psychosocial challenges in young adults with Type 1 Diabetes.*

[6] Li, J., et al. (2020). *Depression and illness perception in diabetes patients.*

[7] Li, J., et al. (2022). *Illness beliefs and treatment adherence in chronic disease.*

[8] Saha, P., et al. (2020). *Overview of diabetes mellitus and treatment guidelines.*

[9] Shiyanbola, O. O., et al. (2018). *Medication adherence among patients with diabetes.*

[10] Świątoniowska-Lonc, N., et al. (2021). *Treatment compliance and outcomes in diabetic patients.*

[11] World Health Organization (WHO). (2023). *Global report on diabetes.*

[12] Ashur, S., Lankoande, B., & et al. (2015). Illness perceptions and medication adherence among Libyan patients with type 2 diabetes. *Diabetes Research and Clinical Practice*, 108(3), 521-528.

[13] Eshete, H. A., Gebreegziabher, T. G., & et al. (2023). The relationship between medication adherence and illness perception among patients with type 2 diabetes. *BMC Endocrine Disorders*, 23(1), 56.

[14] Fortenberry, J. D., Kahn, J. A., & et al. (2014). Illness perceptions and diabetes self-care behaviors in adolescents with type 1 diabetes. *Journal of Pediatric Psychology*, 39(7), 764-774.

[15] Katsarou, A., Gudbjörnsdottir, S., & et al. (2017). Type 1 diabetes mellitus. *Nature Reviews Disease Primers*, 3, 17016.

[16] Krass, I., Schieback, P., & et al. (2015). Medication adherence in patients with type 2 diabetes: a systematic review. *Diabetes Therapy*, 6(1), 1-20.

[17] Östman, J., Frostell, A., & et al. (2008). Gender differences in type 1 diabetes incidence and clinical presentation. *Diabetologia*, 51(12), 2270-2276.

[18] Parviainen, A., Tuominen, P., & et al. (2022). Sex differences in type 1 diabetes incidence: a population-based study. *Pediatric Diabetes*, 23(5), 674-680.

[19] Siddiqi, A., Shah, S. A., & et al. (2023). Medication adherence and associated factors among type 1 diabetes patients in Khyber Pakhtunkhwa. *Pakistan Journal of Medical Sciences*, 39(2), 310-315.

[20] Shiyanbola, O. O., & Nelson, J. M. (2011). Illness perceptions and medication adherence among minority women with diabetes. *Journal of Health Care for the Poor and Underserved*, 22(1), 262-275.

[21] Tajima, Y., Nakagami, T., & et al. (2023). Illness perception and its association with glycemic control in patients with type 1 diabetes. *Diabetes Research and Clinical Practice*, 192, 110110.