www.gjmpbu.org

ScientificScholar®
Knowledge is power
Publisher of Scientific Journals

Global Journal of Medical, Pharmaceutical, and Biomedical Update

Original Article

Assessing the Impact of Compliance and Health Literacy on the Management of Chronic Diseases in the City of Arar, KSA

Muhammad Jan[1], Phd, Bandar Theyab Alenezi[1], Phd, Samah Gaafar Alshygi[1], Phd, Elhassan Eltom[1], M.Parm, Rahma Hamayun[1], M.Parm, Abdullah Khalaf Alanazi[2], MBBS, Abdulrahman Mohammed Alanazi[2], MBBS, Bandar Mutairan Alhudhayyiri[2], MBBS, Abdulrahman Mohammed Mekhlef Alanazi[2], MBBS

Departments of [1]Pharmacology, [2]Faculty of Medicine, Northern Border University, Arar, Kingdom Saudi Arabia.

***Corresponding author:**
Elhassan Eltom,
Lecturer of Pharmacology,
Department of Pharmacology,
Faculty of Medicine, Northern
Border University, Arar,
Kingdom of Saudi Arabia.

alhassan.abdallah@nbu.edu.sa

Received: 21 December 2024
Accepted: 27 January 2025
Published: 19 May 2025

DOI
10.25259/GJMPBU_58_2024

Quick Response Code:

ABSTRACT

Objectives: Long-standing diseases are a major burden on patients, healthcare systems, and families throughout the world. Chronic diseases need prompt treatment to stop complications and improve outcomes. The purpose of this study is to know the effect of compliance and health literacy on the treatment of chronic diseases in the City of Arar, Kingdom of Saudi Arabia.

Material and Methods: Population-based cross-sectional research was carried out in Arar, Saudi Arabia, from July to September 2024. A validated and self-designed questionnaire was disseminated through social media platforms using random sampling methods. The final sample size was established at 385 participants. The analyzed data utilized both descriptive and inferential statistical methods.

Results: The study indicated a high proportion of Saudi nationals (99.1%) which reflects the study's regional focus, while the age distribution was primarily adults aged 31–40 years (34.3%). There is a significant association between high levels of health literacy and improved disease management outcomes. The individuals with a high education level (57.6%) showed a greater level of adherence. Adherent to treatment plans was associated with fewer complications.

Conclusion: Our findings highlight the critical importance of health literacy and adherence in the management of chronic diseases that need smart interventions for improvement.

Keywords: Chronic diseases, City of Arar, Compliance, Health literacy

INTRODUCTION

Long-standing diseases are a burden on patients, healthcare systems, and families throughout the world.[1] Chronic diseases such as diabetes, high blood pressure, and asthma, need prompt treatment to stop complications and improve outcomes.[2] One necessary factor that affects the treatment of chronic diseases is compliance and self-care attitude.[3] Obedience by the patient to the instructions given by healthcare providers regarding strict use of medication, restriction of diet, and physical exercise will bring significant improvement.[4] Health literacy will enhance the ability of individuals to understand health knowledge and to make wise decisions about health care.[5] Health literacy is a critical element in public health, defined as "the degree to

which individuals can obtain, process, and understand the basic health information and services they need to make appropriate health-related decisions."[6] Health literacy is not simply about reading skills but encompasses a broader set of abilities to navigate the healthcare system and make informed choices.[7] Therefore, it is recognized as a key factor influencing health outcomes, especially in the context of chronic disease management.[8] Health literacy can positively influence the management of chronic diseases. Individuals with strong health literacy skills are better equipped to manage chronic diseases.[9] This includes understanding their condition, following treatment plans, and making informed healthcare decisions. When patients can understand complex medical information, actively engage with their healthcare providers, and effectively self-manage their condition, they experience improved health outcomes and a greater sense of control over their well-being.[10]

Health literacy is a complex and multifaceted skill that varies greatly depending on the individual, the specific health information, and the context.[11] People may easily understand familiar health topics but struggle with unfamiliar medical terms or complex conditions.[12] For example, someone comfortable with basic health advice might find it difficult to grasp information about a rare disease. The setting also plays a crucial role; individuals may feel more at ease asking questions in a familiar environment like a community health center than a busy hospital.[13] Importantly, health literacy is not static. It can evolve over time as individuals gain experience, education, and exposure to different health situations.[14]

Many studies have been done on compliance, health literacy, and chronic disease treatment, and have shown a great effect on these factors in improving patient outcomes. For example, Nutbeam *et al*.[7] came to know that low health literacy was associated with poor medication adherence among patients with chronic diseases. Similarly, a systematic review by Saki *et al*.[15] explained that low health literacy was connected to bad health outcomes and enhanced healthcare use in those with chronic diseases.

Besides, many researchers have identified the role of compliance in chronic disease treatment. For example, a meta-analysis by Viegi *et al*.[16] explained that compliance by the patients with treatment methods was greatly concerned with increased health outcomes in different chronic diseases. Moreover, a systematic literature review by Zeber *et al*.[17] showed that if there was noncompliance with drug treatment, there was a great chance of adverse outcomes in patients with high blood pressure and diabetes.[18]

The purpose of this study is to know the effect of compliance and health literacy on the treatment of chronic diseases in the City of Arar, Kingdom of Saudi Arabia. The findings from this study will be invaluable for healthcare providers, as they will offer insights into the barriers patients face in adhering to treatment plans and comprehending health-related information. This knowledge can guide the development of targeted interventions that aim to bolster patient engagement, ensuring that individuals with chronic illnesses are better equipped to manage their conditions.

MATERIAL AND METHODS

Study design and data collection

A population-based and cross-sectional research was carried out in Arar, Saudi Arabia, from July to September 2024. A validated and self-designed questionnaire was disseminated through social media platforms using random sampling methods. The focus of the study was on adults aged 18 years and older residing in Arar City, encompassing individuals of both sexes across different age ranges, marital statuses, and educational levels who have been diagnosed with chronic illnesses.

Sample size determination

The minimum necessary sample size for this research was calculated using Open Epi Version 3.0 (Dean AG, Sullivan KM, Soe MM. OpenEpi: Open Source Epidemiologic Statistics for Public Health, Version. www.OpenEpi.com, updated April 06, 2013). This calculation considered various factors, including an estimated population size (as reported by the General Authority for Statistics), a confidence interval of 95%, and an anticipated prevalence of 50%. The final sample size was established at 385 participants. This study received approval from the Bioethics Committee of Northern Border University HAP-09-A-043 under approval number (69/24/H).

Statistical analysis

The data were gathered, examined, and input into IBM Statistical Package for the Social Sciences Statistics for Windows, version 21.0 (released in 2012; IBM Corp., Armonk, New York, USA). The analyzed data utilizing both descriptive and inferential statistical methods. All statistical analyses were two-tailed, with a significance threshold (alpha) established at 0.05, deeming results significant if the *P*-value was ≤0.05. Descriptive analysis included frequency distributions and percentages for different study variables.

RESULTS

The study included 338 adults with chronic conditions, primarily Saudi nationals living in Arar (99.1%). Most participants were between the ages of 31 and 40 years (34.3%). The group had a higher proportion of men (58.6%) compared to women (41.4%). Educational levels were notably high, with over half (52.7%) holding university degrees. In

addition, a significant portion of participants were married (60.7%) [Table 1].

The data highlight the varied levels of confidence and understanding among participants when dealing with medical information. Approximately 35.8% often feel confident filling out medical forms, while only 17.5% feel confident all the time. A considerable portion, 29.0% of the participants, felt confident only occasionally, with 12.7% rarely feeling confident and 5% never feeling confident.

Many participants also faced challenges in understanding written medical information. Around 35.2% sometimes struggled and 25.4% often encountered difficulties. On the other hand, 20.7% say they rarely had trouble, and 7.7% d no issues at all. However, 10.9% consistently found it challenging to understand medical information [Table 2].

The findings indicate the varying levels of adherence to prescribed treatment plans among participants. About 34.0% of the participants reported following their treatment plans often, while 19.5% always adhered, and 26.0% followed them only sometimes. Fewer participants reported adhering to plans (5.3%) rarely and (15.1%) never adhering to plans. A significant insight is that over half (53.6%) agreed to missing doses of medication due to misunderstanding of instructions.

Regarding routine checkups for managing chronic conditions, 28.7% of the participants visited healthcare

Table 1: Study participant's characteristics (*n*=338).

Study participant's characteristics	Frequency	Percentage
Residency		
Arar	335	99.1
Outside Arar	3	0.9
Age		
20–30	47	13.9
31–40	116	34.3
41–50	100	29.6
51–60	51	15.1
>60	24	7.1
Gender		
Male	198	58.6
Female	140	41.4
Education level		
Primary	30	8.9
Intermediate	19	5.6
Secondary	90	26.6
University	178	52.7
Postgraduate	21	6.2
Marital status		
Single	61	18.0
Married	205	60.7
Divorced	46	13.6
Widowed	26	7.7
Nationality		
Saudi	335	99.1
Non-Saudi	3	0.9

Table 2: Confidence and comprehension in understanding medical information (*n* = 338).

	Frequency	Percentage
How confident are you in filling out medical forms by yourself?		
Never	17	5.0
Rarely	43	12.7
Sometimes	98	29.0
Often	121	35.8
Always	59	17.5
How often do you have problems learning about your medical condition because of difficulty understanding written information?		
Never	26	7.7
Rarely	70	20.7
Sometimes	119	35.2
Often	86	25.4
Always	37	10.9

Table 3: Patient adherence to treatment, medication understanding, and routine check-ups frequency (*n*=338).

	Frequency	Percentage
How often do you adhere to your prescribed treatment plan?		
Never	18	5.3
Rarely	51	15.1
Sometimes	88	26.0
Often	115	34.0
Always	66	19.5
Have you ever missed taking your medication (s) due to misunderstanding the instructions?		
No	157	46.4
Yes	181	53.6
How often do you visit your healthcare provider for routine checkups related to your chronic condition?		
Never	29	8.6
Rarely	55	16.3
Sometimes	114	33.7
Often	97	28.7
Always	43	12.7

providers often, 12.7% always attended, and 33.7% went sometimes. Others reported attending rarely (16.3%) or not at all (8.6%) [Table 3].

Table 4: Patient perceptions of health literacy, disease understanding, and consequences of noncompliance in chronic disease management (n = 338).

	Frequency	Percentage
In your opinion, how much do you think your health literacy level affects your ability to manage your chronic disease (s)?		
Not at all	21	6.2
Slightly	53	15.7
Moderately	89	26.3
Very much	96	28.4
Extremely	79	23.4
How important do you think it is to understand your chronic disease (s) and its treatment plan in managing your health?		
Not important at all	16	4.7
Slightly important	45	13.3
Moderately important	79	23.4
Very important	91	26.9
Extremely important	107	31.7
Have you ever experienced any negative consequences (e.g., worsening of symptoms, hospitalization) due to misunderstanding or non-compliance with your chronic disease management plan?		
No	301	89.1
Yes	37	10.9

The responses reveal that health literacy significantly influences participants' ability to manage their chronic conditions. Only a small portion, 6.2% of participants, felt unaffected by their health literacy, while 15.7% thought it has a slight effect on them. Meanwhile, a larger share of participants –28.4% and 23.4% – reported that health literacy impacts them very much and extremely, respectively, with another 26.3% of participants finding it moderately impactful. There is a clear consensus on the importance of understanding chronic illnesses and treatment plans for effective management. Just 4.7% believe it is not important at all, and 13.3% view it as only slightly important. On the other hand, a strong majority recognize its significance, with 31.7% describing it as extremely important and 26.9% as very important. In addition, 23.4% of the participants see it as moderately important. Finally, the data show that most participants (89.1%) have not faced negative outcomes due to misunderstandings or noncompliance with their chronic disease management plans. However, 10.9% have experienced adverse effects [Table 4].

The analysis of confidence levels in independently completing medical forms highlights significant differences across age and educational backgrounds. Age was found to be notably linked to confidence (P = 0.028), with individuals aged 31–40 and 41–50 years more frequently expressing confidence, especially within the "sometimes" to "always" range. In contrast, those over 60 mostly reported lower confidence levels. Gender, however, showed no meaningful impact on confidence (P = 0.866). Conversely, education level had a strong association with confidence (P = 0.000); those with university

Table 5: Associations between age, gender, education level, and confidence in independent medical form completion.

	How confident are you in filling out medical forms by yourself?					Chi-square	*P*-value
	Never (%)	Rarely (%)	Sometimes (%)	Often (%)	Always (%)		
Age							
20–30	3 (17.6)	3 (7.0)	14 (14.3)	15 (12.4)	12 (20.3)	28.423	0.028*
31–40	4 (23.5)	10 (23.3)	37 (37.8)	42 (34.7)	23 (39.0)		
41–50	4 (23.5)	15 (34.9)	28 (28.6)	38 (31.4)	15 (25.4)		
51–60	2 (11.8)	7 (16.3)	15 (15.3)	22 (18.2)	5 (8.5)		
>60	4 (23.5)	8 (18.6)	4 (4.1)	4 (3.3)	4 (6.8)		
Gender							
Male	10 (58.8)	22 (51.2)	60 (61.2)	71 (58.7)	35 (59.3)	1.272	0.866
Female	7 (41.2)	21 (48.8)	38 (38.8)	50 (41.3)	24 (40.7)		
Education level							
Primary	7 (41.2)	8 (18.6)	8 (8.2)	3 (2.5)	4 (6.8)	71.365	0.000*
Intermediate	1 (5.9)	5 (11.6)	8 (8.2)	4 (3.3)	1 (1.7)		
Secondary	5 (29.4)	13 (30.2)	25 (25.5)	36 (29.8)	11 (18.6)		
University	3 (17.6)	15 (34.9)	54 (55.1)	75 (62.0)	31 (52.5)		
Postgraduate	1 (5.9)	2 (4.7)	3 (3.1)	3 (2.5)	12 (20.3)		

*Age and educational level were notably associated to confidence of independent medical forms filling.

or postgraduate education were the most confident, commonly falling in the "often" and "always" categories [Table 5].

The analysis shows notable links between age (P = 0.013) and education level (P = 0.001) when it comes to challenges in understanding written medical information. In terms of age, individuals aged 31–40 and 41–50 years reported experiencing these challenges more often, mostly within the "sometimes" to "always" range. On the other hand, younger individuals (20–30) and those over 60 years reported fewer difficulties overall. Considering education levels, people with primary or intermediate education levels faced more frequent challenges, whereas those with higher education – particularly those with university or postgraduate degrees – tended to report fewer difficulties [Table 6].

The data analysis indicates that, among various demographic factors related to adherence to treatment plans, only education level shows a meaningful connection, with a very high level of statistical significance ($P < 0.001$). Other factors such as age ($P = 0.645$), gender ($P = 0.244$), and marital status (P = 0.887) did not display any significant association with adherence. Specifically, individuals with higher levels of education, such as those holding university or postgraduate degrees, tend to adhere to treatment plans more consistently, falling mostly within the "often" and "always" adherence categories. In contrast, those with lower educational backgrounds, including primary and intermediate levels, exhibit lower adherence rates [Table 7].

DISCUSSION

This study investigated how the ability of patients to comprehend health information (health literacy) and follow the advice given to them (compliance) affects the management of chronic diseases among patients in Arar, Kingdom of Saudi Arabia. The results indicate that both health literacy and compliance in a more comprehensive manner are important in the management of chronic diseases that require long-term treatment and care.

The study indicated that the majority of participants are of Saudi nationals (99.1%), which reflects the study's regional focus, while the age distribution was primarily adults aged 31–40 years (34.3%) aligning with a population that may be experiencing early to mid-stages of chronic disease progression in chronic diseases, such as hypertension, diabetes, and cardiovascular diseases, are increasingly prevalent among the middle-aged adults, a trend seen across many Middle Eastern populations due to lifestyle, dietary, and genetic factors.[19] It was observed that the participant's marital status may also play a role in health management, as research indicates that married individuals often experience better health outcomes due to social support. The presence of a spouse can encourage adherence to treatment regimens and provide emotional support, which is beneficial for chronic disease management.[20] In Saudi culture, where family structures are strong, marriage may further reinforce these benefits, offering both practical and emotional support in managing health conditions. Another study about the lack of resources concluded that the most important barrier to physical activity was a lack of willpower and social support for adherence to physical activity and healthy diet.[21,22]

Our research reveals a significant association between high levels of health literacy and improved disease management outcomes. The individuals with a high level of education (57.6%) showed a greater level of adherence. These

Table 6: The impact of age and education level on understanding written medical information: An analysis of patient comprehension challenges

	How often do you have problems learning about your medical condition because of difficulty understanding written information?					Chi-square	*P*-value
	Never (%)	Rarely (%)	Sometimes (%)	Often (%)	Always (%)		
Age							
20–30	8 (30.8)	7 (10.0)	17 (14.3)	8 (9.3)	7 (18.9)	31.129	0.013*
31–40	6 (23.1)	24 (34.3)	36 (30.3)	34 (39.5)	16 (43.2)		
41–50	7 (26.9)	25 (35.7)	42 (35.3)	20 (23.3)	6 (16.2)		
51–60	4 (15.4)	11 (15.7)	21 (17.6)	12 (14.0)	3 (8.1)		
>60	1 (3.8)	3 (4.3)	3 (2.5)	12 (14.0)	5 (13.5)		
Education level							
Primary	3 (11.5)	5 (7.1)	5 (4.2)	11 (12.8)	6 (16.2)	38.043	0.001*
Intermediate	1 (3.8)	2 (2.9)	9 (7.6)	5 (5.8)	2 (5.4)		
Secondary	7 (26.9)	19 (27.1)	36 (30.3)	21 (24.4)	7 (18.9)		
University	11 (42.3)	36 (51.4)	68 (57.1)	48 (55.8)	15 (40.5)		
Postgraduate	4 (15.4)	8 (11.4)	1 (0.8)	1 (1.2)	7 (18.9)		

*There is an age and educational level significant effect on the patient comprehension challenges

Table 7: The association of demographic factors with adherence to treatment plans.

	How often do you adhere to your prescribed treatment plan?					Chi-square	*P*-value
	Never (%)	Rarely (%)	Sometimes (%)	Often (%)	Always (%)		
Age							
20–30	2 (11.1)	6 (11.8)	9 (10.2)	14 (12.2)	16 (24.2)	13.383	0.645
31–40	6 (33.3)	15 (29.4)	30 (34.1)	42 (36.5)	23 (34.8)		
41–50	8 (44.4)	16 (31.4)	27 (30.7)	34 (29.6)	15 (22.7)		
51–60	1 (5.6)	8 (15.7)	15 (17.0)	18 (15.7)	9 (13.6)		
>60	1 (5.6)	6 (11.8)	7 (8.0)	7 (6.1)	3 (4.5)		
Gender							
Male	9 (50.0)	25 (49.0)	49 (55.7)	76 (66.1)	39 (59.1)	5.450	0.244
Female	9 (50.0)	26 (51.0)	39 (44.3)	39 (33.9)	27 (40.9)		
Education level							
Primary	4 (22.2)	6 (11.8)	4 (4.5)	12 (10.4)	4 (6.1)	42.757	0.000*
Intermediate	1 (5.6)	6 (11.8)	6 (6.8)	3 (2.6)	3 (4.5)		
Secondary	6 (33.3)	19 (37.3)	27 (30.7)	24 (20.9)	14 (21.2)		
University	3 (16.7)	19 (37.3)	51 (58.0)	67 (58.3)	38 (57.6)		
Postgraduate	4 (22.2)	1 (2.0)	0 (0.0)	9 (7.8)	7 (10.6)		
Marital status							
Single	3 (16.7)	6 (11.8)	16 (18.2)	22 (19.1)	14 (21.2)	6.536	0.887
Married	10 (55.6)	32 (62.7)	54 (61.4)	71 (61.7)	38 (57.6)		
Divorced	2 (11.1)	7 (13.7)	12 (13.6)	14 (12.2)	11 (16.7)		
Widowed	3 (16.7)	6 (11.8)	6 (6.8)	8 (7.0)	3 (4.5)		

*Only educational level shows statistical correlation with the treatment plan adherence.

findings align with similar studies that suggest individuals with adequate health literacy are more likely to follow prescribed treatments, better manage symptoms, and prevent complications.[23,24] The study also highlights the interconnection between health literacy and compliance. Patients with higher health literacy tend to be more compliant with their treatment plans, likely due to a better understanding of the benefits and potential consequences of their actions.[25,26] Specifically, in the context of Arar, where cultural, linguistic, and socioeconomic factors influence health practices, health literacy has emerged as a cornerstone in empowering patients to make informed decisions about their health.

Compliance with prescribed treatment regimens was another critical factor in disease management. The data showed that patients who adhered closely to their treatment plans reported fewer complications and hospital visits, emphasizing the need for interventions focused on compliance. This outcome corroborates findings from studies conducted globally, which highlight the direct impact of compliance on disease control and quality of life in chronic illness patients.[27] This finding aligns with research by Osterberg and Blaschke,[28] who found that consistent medication adherence was associated with better clinical outcomes and reduced complications in chronic disease patients. In Arar, however, more than half (53.6%) of participants reported missing medication due to misunderstandings of the instructions, and this may have hindered compliance, suggesting that targeted policies and healthcare support systems are necessary to improve compliance rates, a conclusion also found in a similar study by Almalki *et al.*[29]

Moreover, 25.4% of the participants claimed to experience difficulties with understanding medical information. The difficulty in understanding this, reported by over a quarter of the participants highlights a pressing need for improved health communication strategies within healthcare settings. In this context, healthcare providers in Arar could benefit from implementing tailored education programs and patient-centered communication strategies to address the specific needs of those with limited health literacy. Research suggests that enhancing communication through simplified language, visual aids, and culturally appropriate messaging can significantly improve patients' understanding of medical information.[30,31] These approaches can foster a more inclusive healthcare environment where patients feel supported in navigating their treatment plans and are better equipped to manage their conditions.[32,33]

In conclusion, the study emphasizes the vital role of health literacy and adherence in managing chronic diseases,

especially in Arar, Saudi Arabia. By promoting these factors through focused educational programs and making healthcare resources more accessible, health providers can markedly enhance patient outcomes and alleviate the strain of chronic illnesses on the healthcare system.

Limitations and recommendations

While this study offers important insights, several limitations must be recognized. The sample consisted solely of patients from Arar, which may restrict the results' applicability to other areas in Saudi Arabia. Furthermore, relying on self-reported data to measure compliance and health literacy could introduce potential biases. Future studies should focus on a larger and more diverse population across various regions of Saudi Arabia and utilize objective measures of compliance, such as reviews of medical records.

In addition, exploring the impact of digital health tools, which have demonstrated effectiveness in promoting patient engagement in other contexts, could be advantageous for individuals in Arar and similar communities. Finally, research that examines how changes in healthcare policies affect medication access and affordability could provide valuable insights into the systemic challenges faced in managing chronic diseases.

CONCLUSION

This study underscores the critical interplay between health literacy and treatment compliance in the effective management of chronic diseases in Arar, Saudi Arabia. Participants with higher education were significantly have adherence to medical advice, which reflected in a fewer complications and better treatment outcomes. Yet, the findings reveal persistent challenges that over a quarter of participants struggled to understand medical information, and more than half reported nonadherence due to misinterpreted instructions. These insights highlighted the urgent need for managerial and educational interventions. In a region where chronic conditions are on the rise and family support plays a pivotal role, enhancing both health education and system-level support can empower patients, improve compliance, and ultimately ease the burden of chronic diseases. Simply put, better understanding leads to better outcomes.

Disclosures: We disclose that no author involved in this research has any conflict of interest that could potentially bias the results or interpretation of the study.

Ethical approval: The research/study approved by the Institutional Review Board at Bioethics Committee of Northern Border University HAP-09-A-043, number (69/24/H), dated 6th June 2024.
Declaration of patient consent: Patient's consent not required as there are no patients in this study.

Financial support and sponsorship: All authors contributed equally to funding this research.
Conflict of interest: There are no conflict of interest.
Use of artificial intelligence (AI)-assisted technology for manuscript preparation: The authors confirms that they have used artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript or image creations.

REFERENCES

1. Berkman ND, Sheridan SL, Donahue KE, Halpern DJ, Crotty K. Low Health Literacy and Health Outcomes: An Updated Systematic Review. Ann Intern Med 2011;155:97-107.
2. DiMatteo MR. Social Support and Patient Adherence to Medical Treatment: A Meta-Analysis. Health Psychol 2004;23:207-18.
3. Eldooma I, Maatoug M, Yousif M. Outcomes of Pharmacist-Led Pharmaceutical Care Interventions within Community Pharmacies: Narrative Review. Integr Pharm Res Pract 2023;12:113-26.
4. Jaarsma T, Cameron J, Riegel B, Stromberg A. Factors Related to Self-Care in Heart Failure Patients According to the Middle-Range Theory of Self-Care of Chronic Illness: A Literature Update. Curr Heart Fail Rep 2017;14:71-7.
5. Naalweh KS, Barakat MA, Sweileh MW, Al-Jabi SW, Sweileh WM, Zyoud SH. Treatment Adherence and Perception in Patients on Maintenance Hemodialysis: A Cross - sectional Study from Palestine. BMC Nephrol 2017;18:178
6. Poureslami I, Nimmon L, Rootman I, Fitzgerald MJ. Health Literacy and Chronic Disease Management: Drawing from Expert Knowledge to Set an Agenda. Health Promot Int 2016;2016:daw003.
7. Nutbeam D, Lloyd JE. Understanding and Responding to Health Literacy as a Social Determinant of Health. Annu Rev Public Health 2021;42:159-73.
8. Santana S, Brach C, Harris L, Ochiai E, Blakey C, Bevington F, *et al*. Updating Health Literacy for Healthy People 2030: Defining Its Importance for a New Decade in Public Health. J Public Health Manag Pract 2021;27(Supplement 6):S258-64.
9. Muscat DM, Song W, Cvejic E, Ting JH, Medlin J, Nutbeam D. The Impact of the Chronic Disease Self-Management Program on Health Literacy: A Pre-Post Study Using a Multi-Dimensional Health Literacy Instrument. Int J Environ Res Public Health 2019;17:58.
10. Dineen-Griffin S, Garcia-Cardenas V, Williams K, Benrimoj SI. Helping Patients Help Themselves: A Systematic Review of Self-management Support Strategies in Primary Health Care Practice. PLOS One 2019;14:e0220116.
11. Zhang F, Or PP, Chung JW. How Different Health Literacy Dimensions Influences Health and Well-being among Men and Women: The Mediating Role of Health Behaviours. Health Expect 2021;24:617-27.
12. Mannsåker IK, Vågan A, Geirdal AØ, Stenberg U. Hospital Social Workers' Contributions to Increasing Health Literacy among Parents of Acutely and Critically Ill Children. Eur J Soc Work 2023;26:121-33.
13. Uzochukwu B, Agwu P, Okeke C, Uzochukwu A, Onwujekwe O. Ensuring Safety of Patients in Complex Health

Systems: A Focus on Primary Healthcare Service Relations in Nigeria. Health Soc Work 2023;48:54-63.
14. Rheault H. Examining the Chronic Disease Health Literacy of First Nations Australians: A Mixed Methods Study. [Professional Doctorate]. Queensland University of Technology; 2022. Available from: https://eprints.qut.edu.au/228618 [Last accessed on 2025 Jan 25].
15. Saki M, Najmi S, Gholami M, Ebrahimzadeh F, Pour FJ. The Effect of Patient-centered Education in Adherence to the Treatment Regimen in Patients with Coronary Artery Disease. J Vasc Nurs 2022;40:28-34.
16. Viegi G, Maio S, Fasola S, Baldacci S. Global Burden of Chronic Respiratory Diseases. J Aerosol Med Pulm Drug Deliv 2020;33:171-7.
17. Zeber JE, Manias E, Williams AF, Hutchins D, Udezi WA, Roberts CS, *et al*. A Systematic Literature Review of Psychosocial and Behavioral Factors Associated with Initial Medication Adherence: A Report of the ISPOR Medication Adherence and Persistence Special Interest Group. Value Health 2013;16:891-900.
18. Pignone M, DeWalt DA, Sheridan S, Berkman N, Lohr KN. Interventions to Improve Health Outcomes for Patients with Low Literacy. A Systematic Review. J Gen Intern Med 2005;20:185-92.
19. Al-Nozha MM, Arafah MR, Al-Mazrou YY, Al-Maatouq MA, Khan NB, Khalil MZ, *et al*. Coronary Artery Disease in Saudi Arabia. Saudi Med J 2004;25:1165-71.
20. Kiecolt-Glaser JK, Newton TL. Marriage and Health: His and Hers. Psychol Bull 2001;127:472-503.
21. Cordioli M, Corbetta A, Kariis HM, Jukarainen S, Vartiainen P, Kiiskinen T, *et al*. Socio-demographic and Genetic Risk Factors for Drug Adherence and Persistence Across 5 Common Medication Classes. Nat Commun 2024;15:9156.
22. Gupta H. Barriers to and Facilitators of Long Term Weight Loss Maintenance in Adult UK People: A Thematic Analysis. Int J Prev Med 2014;5:1512-20.
23. Zou H, Liu J, Jiang D, Hou L, Wang W, Zhang L. The Effect of Health Literacy on Disease Management Self-Efficacy in Chronic Disease Patients: The Mediating Effects of Social Support and the Moderating Effects of Illness Perception. Patient Prefer Adherence 2024;18:657-66.
24. Roshan AG, Hosseinkhani SN, Norouzadeh R. Health Literacy and Self-efficacy of the Elderly with Diabetes. J Diabetes Metab Disord 2023;22:611-7.
25. Osborn CY, Paasche-Orlow MK, Bailey SC, Wolf MS. The Mechanisms Linking Health Literacy to Behavior and Health Status. Am J Health Behav 2011;35:118-28.
26. Liu L, Qian X, Chen Z, He T. Health Literacy and Its Effect On Chronic Disease Prevention: Evidence from China's Data. BMC Public Health 2020;20:690.
27. De Geest S, Sabaté E. Adherence to Long-term Therapies: Evidence for Action. Eur J Cardiovasc Nurs 2003;2:323.
28. Osterberg L, Blaschke T. Adherence to Medication. N Engl J Med 2005;353:487-97.
29. Almalki M, Fitzgerald G, Clark M. Health Care System in Saudi Arabia: An Overview. East Mediterr Health J 2011;17:784-93.
30. Speros C. Health Literacy: Concept Analysis. J Adv Nurs 2005;50:633-40.
31. Koh HK, Brach C, Harris LM, Parchman ML. A Proposed "Health Literate Care Model" Would Constitute a Systems Approach to Improving Patients' Engagement in Care. Health Aff Proj Hope 2013;32:357-67.
32. AlQuaiz AM, Tayel SA. Barriers to a Healthy Lifestyle among Patients Attending Primary Care Clinics at a University Hospital in Riyadh. Ann Saudi Med 2009;29:30-5.
33. Williams MV, Baker DW, Parker RM, Nurss JR. Relationship of Functional Health Literacy to Patients' Knowledge of Their Chronic Disease: A Study of Patients With Hypertension and Diabetes. Arch Intern Med 1998;158:166.

How to cite this article: Jan M, Alenezi BT, Alshygi SG, Eltom E, Hamayun R, Alanazi AK, *et al*. Assessing the Impact of Compliance and Health Literacy on the Management of Chronic Diseases in the City of Arar, KSA. Glob J Med Pharm Biomed Update. 2025;20:8. doi: 10.25259/GJMPBU_58_2024