Prevalence and Risk Factors of Treatment Non-compliance among Elderly Diabetic Patients in Saudi Arabia 2023

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Abstract:

Background:

Patients' non-adherence to diabetes treatment is associated with poor glycemic control and suboptimal benefits from their prescribed medication, which can lead to worsening of medical condition, development of comorbidities, reduced quality of life, elevated healthcare costs, increased mortality, and risk factors causing poor adherence to treatment among Non-compliance about elderly diabetic patients and self-care practices among diabetes mellitus (TDM) patients have been reported before in Saudi Arabia, treatment non-adherence is a common and significant public health problem, especially among the geriatric population. Worldwide, the geriatric population aged more than 60 years tends to be increasing significantly, the number will be expanding from 21 billion by 2050. In Saudi Arabia, the most recent elderly survey by General Authority for Statistics revealed that the elderly represents are estimated to reach 18.4% by 2050. Population ageing has its consequences, including health-related issues such as multi morbidity of chronic diseases and poor adherence to treatment among population.

Aim of the study: To assessment prevalence and risk factors of treatment Non-compliance among Elderly Diabetic Patients in Saudi Arabia 2023.

Method: cross sectional study conducted at outpatient clinics in primary health care center in Saudi Arabia in Sample population consists of Saudi out patients aged 60 <80 years attending. Our total participants were (200).

Results:. Show regarding age majority of the study groups from the 50-60 years were (41.0%), gender many of the respondents were male (59.0 %), regarding the education status the majority of the respondents intermediate were (29.0%) the occupation the most of the participants answer Not work were (51.0%), regarding the living status the most of participant with family were (78.0%), regarding the currently working the most of the participant answer Yes were (75.0%).

Conclusion: The level of adherence to treatment in diabetes mellitus patients in Saudi Arabia PHCCs was found to be suboptimal. The findings point toward the need for better management of primary health care providers' approaches to individual patients, by taking into account their medication adherence levels, better identification of patients' level of adherence remains essential for successful diabetes treatment.

Keywords: Prevalence, Risk, Factors, Treatment, Non-compliance, Elderly, Diabetic Patients, Saudi Arabia.

Introduction

Background

Diabetes can be managed well by adherence to prescribed oral hypoglycemic agents (OHAs) and/or insulin. The glycated hemoglobin (A1c) test measures the average blood glucose of patients for the previous 2–3 months and has strong predictive value for diabetes complications.[1] To reduce the risk of long-term complications of diabetes, a reasonable A1c goal for non-pregnant adults is ,7%.4 The Middle East has seen some of the highest growth in the amount of DM sufferers worldwide; five out of the top ten nations with the highest diabetes occurrence are in the Middle East, and trends estimate that the region will show a disease growth of more than 90% by 2030. [2] In Saudi Arabia, there has been an 8% rise in the prevalence of DM over the past 10 years and currently, approximately 25% of Saudi residents are diabetic. [3]

Worldwide, the geriatric population aged more than 60 years tends to be increasing significantly.[4] The number will be expanding from 1 billion in 2019 to 21 billion by 2050.[5] In Saudi Arabia, the most recent elderly survey by General Authority for Statistics revealed that the elderly represents 4.19% of the total Saudi population,[6] and are estimated to reach 18.4% by 2050.[7] Population ageing has its consequences, including health-related issues such as multimorbidity of chronic diseases. Most common preventable chronic diseases in Saudi Arabia related to lifestyle and strongly correlated with ageing are hypertension, diabetes type 2, dyslipidemia and obesity.[8] Multimorbidity of chronic diseases refers to the coexistence of two or more chronic conditions present for more than one year.[9] Chronic conditions in the elderly have been paralleled with increasing healthcare costs and utilization, polypharmacy, and medication non-adherence.[10]

The WHO defines adherence for long-term treatment 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".(11,12) According to the WHO report, the average adherence to long-term therapy for chronic diseases in developed countries is approximately 50%, and in developing countries the adherence rate is even lower. (13) The report illustrated that the range of adherence for medicines is 31%–71% and much lower for lifestyle instructions, even with the availability of up-to-date and effective methods of treatment. (14) As a result, poor medication adherence leads to worsening of the disease and increased mortality, and imposes a significant financial burden on both the individual patient and the health care system. Globally, diabetes accounts for 11% of total health care expenditure in 2011 Diabetes mellitus (DM) is a serious global issue and a public health care concern rapidly expanding worldwide (15). It has the highest psychological and behavioral demands of all chronic illnesses (16). There is no indication that the prevalence of DM will reverse as it continues to rise globally (17). DM prevalence in the Middle East and North Africa (MENA) area; which Saudi Arabia is part of, had the highest regional prevalence rate of 12.2% and 16.2% in 2019 and 2021; respectively (18,19). Although it has been estimated that the prevalence of DM in Saudi Arabia might reach 14.1%, the exact prevalence is unclear (20). According to survey findings by Beshyah, the incidence of non-communicable illnesses like DM is frighteningly high (16.4%) (21). By 2045, DM cases will reach 762.500 in Saudi Arabia, up from 442.500 in 2017, in which adults had a diabetes prevalence of 11.2% (22).

Review of literatures

Medication adherence is a critical element in treating chronic diseases especially diabetes among elderly and non-adherence among elderly patients is an issue facing health care providers. Previous studies report that measuring adherence and patient compliance is quite difficult and is patient-dependent most of the time.(23)

Study in Saudi Arabia Risk Factors of Treatment Non-compliance we found that 64.9% of participants had a high level of medication adherence, 21.3% had a good level of adherence, 13.3% had a partial level of adherence, and 0.5% had a low level of adherence(24) .

These findings rates are higher than those in previous studies that used different medication adherence assessment tools.(25) One similar study in Saudi Arabia used the same tool to assess diabetic patients, reporting that a third of patients were (highly adherent 35.8%), (22.6% were good), (34.9% were partial), and (4.7% of patients had low medication adherence).(26) The high level of adherence in this study might have been related to populations' age (69.7±6.8); another study in Saudi Arabia founds a positive correlation between the level of adherence and age, high rates of adherence in patients aged 60 years and above.(27) Furthermore, one factor that might have contributed to this finding was that we used validated Arabic translation questionnaires to ensure participants clearly understood the questions.(28)

Non-compliance might have a significant result on medication outcomes and direct medical consequences. Non-compliance is directly related to poor treatment outcomes in patients with polygenic disease, epilepsy, AIDS (acquired immunological disorder

syndrome), asthma, TB, high blood pressure, and organ transplants. For instance, in hypertensive sufferers, bad compliance with remedy is the most critical reason for poorly controlled vital sign, therefore increasing the threat of stroke, myocardial infarction organ impairment markedly. (29)

Adherence to diabetic medications was found to be positively associated with a decrease in A1c.(30) Jazan, Saudi Arabian, and French studies showed that improved adherence to diabetes mellitus. Medication was associated with better glycemic control.(31) These findings demonstrate that patients with poor adherence show poor glycemic control (32).

There is no gold standard method to evaluate medication taking behavior. Studies have stated that adopting a valid scale such as the MGLS to measure adherence level is correct because the sensitivity and specificity are over 70%. (33) This study has a number of limitations. First, the use of a self-report method to evaluate patient adherence can lead to overestimation of adherence.(34)

Treatment noncompliance significantly affects morbidity, mortality, and simplicity of living during the illness. Non-compliance could also be related to patient demographics, the complexness of the medication routine, dose recurrence, antagonistic impacts, adverse effects or some combination of those it is an across the board conviction that patients are less disciple to treatment as a result of declining psychological capacity. (24)

Prescription adherence can be characterized as accepting meds as prompted and recommended experts for the expressed span (17). The non-adherence further outcomes in malady related intricacies and comorbidities that may build the recurrence of medical clinic confirmations, crisis visits and direct treatment costs. These immediate expenses, contingent on the medicinal services division of a nation, may either be borne by the health sector or in some cases the patient. (18)

Rationale

Non-adherence to recommended medication and self-care practices exists among T2DM patients in Saudi Arabia and is unsatisfactory but reasonable compared to other countries. Influential factors contributing to non-adherence behavior are the type of prescribed medications, carelessness, unawareness, forgetfulness, stopping taking prescribed antidiuretic medication when feeling well and symptoms under control, and medication side effects. Monitoring T2DM individuals' medication adherence levels and self-care practices through regular follow-up and providing these patients with the necessary education is vital. This will make it easier for medical practitioners to recognize patients who don't take their medications as prescribed, aid in creating effective programs, and facilitate the establishment of successful measures to encourage medication adherence and self-care practices and eventually prevent diabetic complications. If the patient does not follow the specified treatment plan, all attempts, time, and funds spent on diagnosing, prescribing, and educating them on their condition will be squandered..

Aim of the study

To assessment prevalence and risk factors of treatment Non-compliance among Elderly Diabetic Patients in Saudi Arabia 2023 .

Specific objective

To assessment prevalence and risk factors of treatment Non-compliance among Elderly Diabetic Patients in Saudi Arabia 2023.

Methodology

Study setting:

This study has been conducted among elderly diabetic patients attending health care center at Saudi Arabia in 2023.

Study Population

The study population consists of elderly diabetic patients Saudi out patients clinics aged 60-80 years attending to outpatient attending health care center Saudi Arabia

Study Design

Cross-sectional, analytic study , systematic random sampling technique

Inclusion criteria:

Elderly patients attending PHC aged 60-80 years
Able and willing to participate in the study .
Take some sort of prescribed medications.

Exclusion Criteria

Out patients less than 60 years
Not able and refuses to participate in the study.

Sample size:

Using EPI info version 24, the study sample size has been determined based on the following assumptions :
Since there is not an official release, e.g., by the "Central Department of Statistics and Information" in Saudi, of the exact census of Saudi Arabia residents falling within the study's age category, a source population size of the same of has be assumed. (Definitely, the true population of such category is greater , also to be most conservative, the least number needed for a reasonably large sample size that allows generalizability of the study result. Knowingly, sample sizes obtained from source population sizes above are not significantly different).
Accordingly, a sample size (n) would be 200. In order to account for non-response and achieve more generalizable results, the investigator has be increase the sample size up to 200.

Sampling Technique:

Regarding health care center selection, by using simple random sample technique (by using randomizer.org), regarding patients' selection, the total number visiting is 2711 per month and the sample size is 200. The data collection period is 30 days (four weeks minus weekends). Every day there are nearly 85 patients attending in PHC in both sections (male and female sections). To collect data from sample size, the researcher needs nearly 20 patients per day to collect desired sample size. The researcher has been selecting every 4th patient to cover the sample size during data collection period. .

Sampling method:

The total number of elderly patients attending primary health care center in one month is 2711. Based on this information sample size was calculated using a website (raosoft.com). The resulted estimated sample size is 200 elderly patients. The confidence interval is 95% and margin of error is 5%. The estimated prevalence used is 50% to calculate maximum sample size.

Data collection method:

Self-administered questionnaire has been given to all participants. Those who have trouble reading or writing the questionnaire, has be filled by the interviewer

Questionnaire:

An Arabic self-administered questionnaire has been used. It consisted of three sections. **The first** section is on the socio-demographic and presence of chronic disease, and present medication history (e.g., age and education level). **The second** sections cover common reasons of drug noncompliance (patient, medication, health care related factors). **The third** section addresses the part the possible suggestion to increase the patient level of adherence and compliance with medications.

Data Collection Technique

The researcher has visit the health care center The researcher has filled the questionnaires through the interview with patients who are attending elderly patients attending health care center met the inclusion criteria after taking their verbal consent. After obtaining necessary approvals, the researcher and one trained nurse used a since all centers work on walk-in basis, i.e., using "systematic random sampling" technique .

Data Entry and Analysis

Data has been collected and coded and then entered to a MS program with adequate backup. Descriptive statistics, e.g., number, proportions, cumulative proportions, mean and standard deviation, etc. has been displayed, as appropriate. Analytically, a parametric technique, e.g., t-test and ANOVA, has been attempted, as applicable, especially analyzing normally distributed variables. Otherwise, a non-parametric alternative, e.g., Man Whitney U test and ANOVA or χ^2 test of independence, has been used, as necessary. The Statistical Package for Social Sciences (SPSS) software for MS- version-24 will be used for the analysis. All tests has been conducted at level of significance a=0.05; results with p-values<0.05 has been considered "statistically significant ".

Pilot Study

A pilot study has been done on 10 Saudi patients who meet the study's eligibility criteria. The pilot study has been mainly help examine both the instrument's content validity and construct validity issues, alongside with other needed information.

Ethical Considerations

Necessary approval has been the Research Ethics Committee of the PHC, shall be obtained prior to the study   .

A written consent has been obtained both from PHC administration. The aim of the study has been explained to them. Feedback about the results has been sent to these organizations . Data has been treated confidentially and has been used only for the purpose of research .

Budget : Self-funded.

Table (1) Distribution of the socio-demographic details among the elderly patients included (200)

	N	%
Age		
50-60	82	41
60-70	66	33
>70	52	26
Gender		
Female	82	41
Male	118	59
Nationality		
Saudi	170	85
Non-Saudi	30	15
Education		
Uneducated	30	15
Elementary	34	17
Intermediate	58	29
Secondary	28	14
Higher education	50	25
Occupation		
Yes	98	49
No	102	51
Income		
Less than 3000SR	42	21
3000-6000SR	62	31

6000-9000SR	58	29
More than 9000SR	38	19
Living status		
With family	156	78
Alone	44	22
Currently working		
Yes	150	75
No	50	25

Regarding the distribution of the socio-demographic details among the elderly patients regarding age majority of the study groups from the 50-60 years were (41.0%) followed by 60 to70 years were (33.0%) but > 70 years were (26.0%) , regarding the gender many of the respondents were male (59.0 %) while female were (41.0%), regarding the nationality the majority of the respondents Saudi were (85.0%) while Non-Saudi were (15.0%) , regarding the education status the majority of the respondents intermediate were (29.0%) but the higher education were (25.0%), regarding the occupation the most of the participants answer Not work were (51.0%) while Yes were(49.0%), regarding the income the majority of them had an income from (3000-6000SR) were (31.0%) while from 6000-9000SR were (29.0%) but less than 3000SR were (21.0%), regarding the living status the most of participant with family were (78.0%) while alone were (22.0%), regarding the currently working the most of the participant answer Yes were (75.0%) while No were (25.0%) .

Table (2) description of association between clinical variables and medication adherence
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Adherent Indicators	Total		Medication adherence				Chi-Square	
			Non-adherent		Adherent			
	N	%	N	%	N	%	X^2	*P*-value
Type of diabetes								
Type 1	124	62	14	11.29	110	88.71	52.075	<0.001
Type 2	76	38	46	60.53	30	39.47		
Disease duration								
< 5 years	68	34	10	14.71	58	85.29	35.956	<0.001*
5–10 years	88	44	26	29.55	62	70.45		
> 10 years	112	56	64	57.14	48	42.86		
Current medication								

OHA only	36	18	12	33.33	24	66.67	
OHA + insulin	48	24	28	58.33	20	41.67	19.814	<0.001*
Insulin only	116	58	26	22.41	90	77.59	
Number of associated comorbidities							
None	64	32	28	43.75	36	56.25	
1	30	15	10	33.33	20	66.67	24.387	<0.001*
2	22	11	4	18.18	18	81.82	
<3	84	42	8	9.52	76	90.48	

Regarding description of association between clinical variables and medication adherence regarding type of diabetes a statistical significant relation were P=value 0.001 and X^2 52.075, the majority of the Participants type 1 in adherent were (88.71%) from total (62.0%) followed by type 2 in Non-adherent were (60.53%) from total (38.0%), regarding disease duration a statistical significant relation were P=value 0.001 and X^2 35.956, the majority of the Participants > 10 years in Non-adherent were (57.14%) from total (56.0%) followed by < 5 years in adherent were (85.29%) from total (68.0%), regarding current medication a statistical significant relation were P=value 0.001 and X^2 19.814, the majority of the Participants OHA + insulin in Non-adherent were (58.71%) from total (24.0%) followed by Insulin only in adherent were (77.59%) from total (58.0%), regarding number of associated comorbidities a statistical significant relation were P=value 0.001 and X^2 24.387, the majority of the Participants None in Non-adherent were (43.75%) from total (32.0%) followed by <3 in adherent were (90.48%) from total (42.0%)

**Figure (1) description of association between clinical variables and medication adherence** .
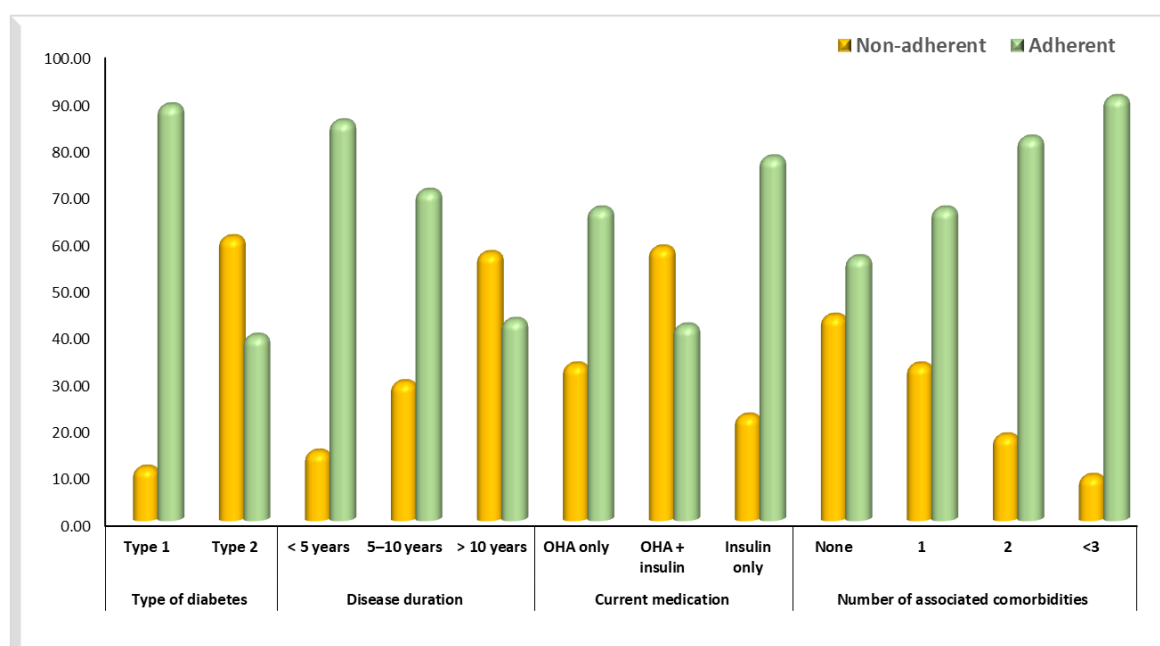
Table 3. Adherence indicators and diabetic self-care practices of the participants

Adherent Indicators	Total		Non-adherent		Adherent		Chi-Square	
	N	%	N	%	N	%	X^2	*P*-value
Taking prescribed medication as recommended and not being careless	158	79	18	11.39	140	88.61	92.665	<0.001*
Maintaining and not finding difficulty in following recommended dietary restrictions.	118	59	56	47.46	62	52.54	0.212	0.645
Performing exercise regularly	74	37	53	71.62	21	28.38	12.986	0.0003
Monitoring blood glucose levels regularly	146	73	44	30.14	102	69.86	22.253	<0.001*

Regarding adherence indicators and diabetic self-care practices of the participants regarding taking prescribed medication as recommended and not being careless a statistical significant relation were P=value 0.001 and X^2 92.665 the majority of the Participants in adherent were (88.61%) followed by Non-adherent were (11.39%) from total (79.0%), regarding maintaining and not finding difficulty in following recommended dietary restrictions no statistical significant relation were P=value 0.645 and X^2 0.212, the majority of the Participants in adherent were (52.54%) followed in Non-adherent were (47.46%) from total (59.0%), regarding Performing exercise regularly a statistical significant relation were P=value 0.0003 and X^2 12.986, the majority of the Participants in Non-adherent were (71.62%) followed by in adherent were (28.38%) from total (37.0%), regarding Monitoring blood glucose levels regularly a statistical significant relation were P=value 0.001 and X^2 22.253, the majority of the Participants in adherent were (69.86%) followed in Non-adherent were (30.14%) from total (73.0%).

Figure (2) Adherence indicators and diabetic self-care practices of the participants
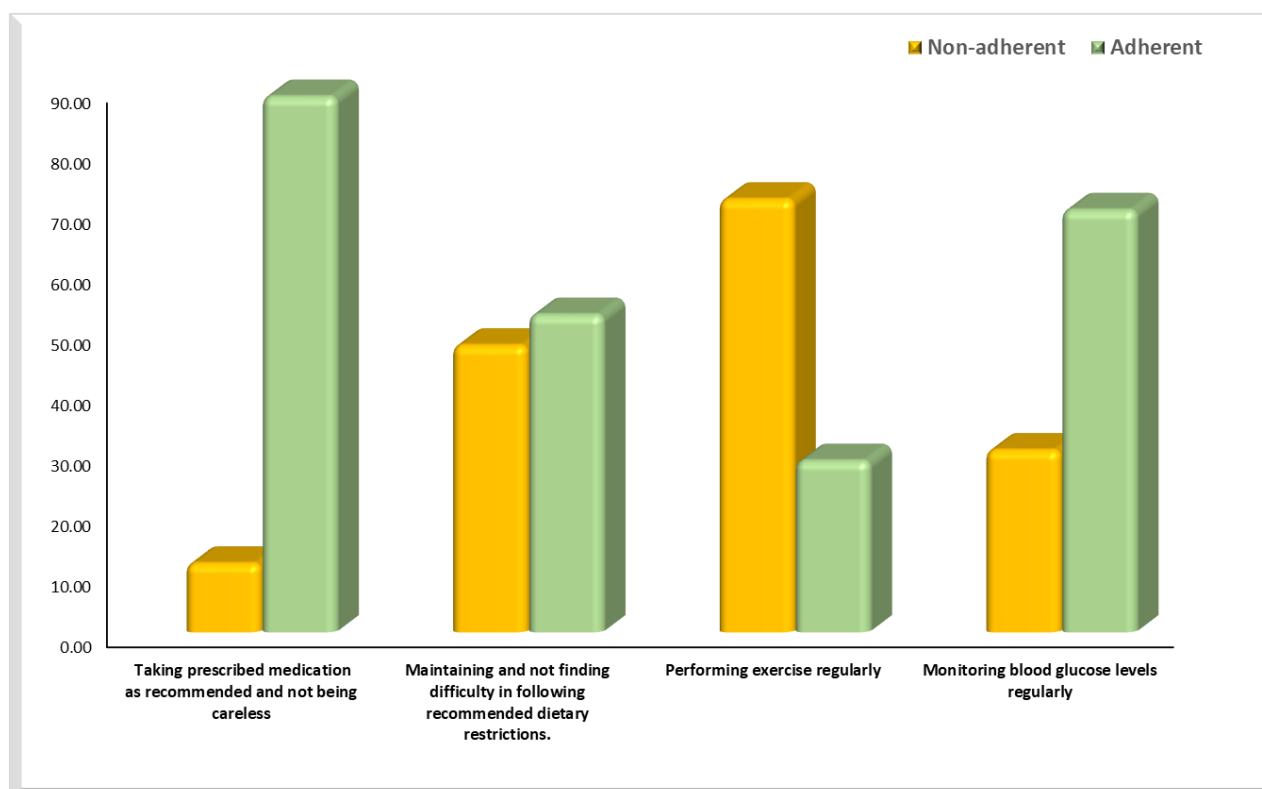
Table (4) Description common reasons of drug noncompliance related factors (elderly patient, medication, health care related factors).

	Yes		No		Chi-Square	
	N	**%**	**N**	**%**	**X^2**	**P-value**
Patient related factors:						
Low income	82	41	118	59	6.480	0.011
Presence of sensory impairment	40	20	160	80	72.000	0.000
Weak memory	64	32	136	68	25.920	0.000
Insufficient knowledge about medications	98	49	102	51	0.080	0.777
Depression, sense of unusualness	66	33	134	67	23.120	0.000
No progress.	84	42	116	58	5.120	0.024
No social or peer support.	58	29	142	71	35.280	0.000
I don't trust the doctor.	38	19	162	81	76.880	0.000
Medication related factors						
Too much medication.	106	53	94	47	0.720	0.396
Too long time.	92	46	108	54	1.280	0.258
Complexity of medication.	66	33	134	67	23.120	0.000
Improper timing.	98	49	102	51	0.080	0.777

Not available.	62	31	138	69	28.880	0.000
Health care relate factors						
Negative physician attitude.	34	17	166	83	87.120	0.000
Less availability of health centers.	72	36	128	64	15.680	0.000
Patients suggest enhancing his compliance						
Change the form of drug.	124	62	76	38	11.520	0.001
Regulate the time of doses.	144	72	56	28	38.720	0.000
Multidrug in one bill.	140	70	60	30	32.000	0.000
Take advice from more than one doctor.	112	56	88	44	2.880	0.090
Social and emotional support	132	66	68	34	20.480	0.000

Regarding description common reasons of drug noncompliance related factors show regarding the patient related factors regarding the low income a statistical significant relation were P=value 0.011 and X^2 6.480 the majority of the participants answer No were (59.0%) followed by Yes were (41.0%), regarding the presence of sensory impairment a statistical significant relation were P=value 0.000 and X^2 72.000 the majority of the participants answer No were (80.0%) followed by Yes were (20.0%), regarding weak memory a statistical significant relation were P=value 0.000 and X^2 25.920 the majority of the participants answer No were (68.0%) followed by Yes were (32.0%), regarding insufficient knowledge about medications no statistical significant relation were P=value 0.777 and X^2 0.080 the majority of the participants answer No were (51.0%) followed by Yes were (49.0%), regarding depression, sense of unusualness a statistical significant relation were P=value 0.000 and X^2 23.120 the majority of the participants answer No were (67.0%) followed by Yes were (33.0%), regarding no progress a statistical significant relation were P=value 0.024 and X^2 5.120 the majority of the participants answer No were (58.0%) followed by Yes were (42.0%), regarding no social or peer support a statistical significant relation were P=value 0.000 and X^2 35.280 the majority of the participants answer No were (71.0%) followed by Yes were (29.0%), regarding I don't trust the doctor a statistical significant relation were P=value 0.000 and X^2 76.880 the majority of the participants answer No were (81.0%) followed by Yes were (19.0%).

Regarding medication related factors show regarding too much medication no statistical significant relation were P=value 0.396 and X^2 0.720 the majority of the participants answer Yes were (53.0%) followed by No were (47.0%), regarding too long time no statistical significant relation were P=value 0.258 and X^2 1.280 the majority of the participants answer No were (54.0%) followed by Yes were (46.0%), regarding complexity of medication a statistical significant relation were P=value 0.000 and X^2 23.120 the majority of the participants answer No were (67.0%) followed by Yes were (33.0%), regarding improper timing no statistical significant relation were P=value 0.777 and X^2 0.080 the majority of the participants answer No were (51.0%) followed by Yes were (49.0%), regarding not

available a statistical significant relation were P=value 0.000 and X^2 28.880 the majority of the participants answer No were (69.0%) followed by Yes were (31.0%) .

Regarding Health care relate factors show regarding negative physician attitude a statistical significant relation were P=value 0.000 and X^2 87.120 the majority of the participants answer No were (83.0%) followed by Yes were (17.0%), regarding less availability of health centers a statistical significant relation were P=value 0.000 and X^2 15.680 the majority of the participants answer No were (64.0%) followed by Yes were (36.0%).

Regarding Patients suggest enhancing his compliance show regarding change the form of drug a statistical significant relation were P=value 0.001 and X^2 11.520 the majority of the participants Change the form of drug answer Yes were (62.0%) followed by No were (38.0%), regarding regulate the time of doses a statistical significant relation were P=value 0.000 and X^2 38.720 the majority of the participants answer Yes were (72.0%) followed by No were (28.0%), regarding multidrug in one bill a statistical significant relation were P=value 0.000 and X^2 32.000 the majority of the participants answer Yes were (70.0%) followed by No were (30.0%), regarding improper timing no statistical significant relation were P=value 0.777 and X^2 0.080 the majority of the participants answer No were (51.0%) followed by Yes were (49.0%), regarding take advice from more than one doctor a statistical significant relation were P=value 0.090 and X^2 2.880 the majority of the participants answer Yes were (56.0%) followed by No were (44.0%), regarding social and emotional support a statistical significant relation were P=value 0.000 and X^2 20.480 the majority of the participants answer Yes were (66.0%) followed by No were (34.0%) .

Discussion

The study shows the socio-demographic details included (200) participant elderly diabetic patients in Saudi Arabia were enrolled in this study prevalence and risk factors of treatment Non-compliance related factors (patient, medication, health care related factors).(Insufficient knowledge about medications , no progress , depression sense of unusualness , weak memory. Medication adherence is a critical element in treating among elderly diabetic patients , and non-adherence among elderly patients is an issue facing health care providers. Previous studies report that measuring adherence and patient compliance is quite difficult and is patient-dependent most of the time.(35) Hence, this study aimed to assess prevalence and risk factors of treatment Non-compliance among Elderly Diabetic Patients in Saudi Arabia 2023, in our study show regarding age majority of the study groups from the 50-60 years were (41.0%) gender many of the respondents were male (59.0 %) , regarding the education status the majority of the respondents intermediate were (29.0%), regarding the income the majority of them had an income from (3000-6000SR) were (31.0%), regarding the living status the most of participant with family were (78.0%) while alone were (22.0%), regarding the currently working the most of the participant answer Yes were (75.0%).(See table 1).

regarding the adherence indicators and diabetic self-care practices of the participants The current outcome (88.61%) of taking prescribed medication as recommended and not being careless adherence was higher than a previous national outcome reported from Jazan (23%) and Al Hasa (32.1%). Globally, the research findings were suboptimal and lower than that from earlier studies in Palestine (58%),(360 Malaysia (47%),30 and France (39%).(37) The

reported adherence in this study among DM patients remains unsatisfactory and similar to prior findings reported from Switzerland (40%), Tanzania (60%), Ethiopia (51.3%), Egypt (38.9%), and Uganda (71.2).(38) Also, this suboptimal finding is in line with the outcome of a systematic review of 20 research articles published between 1966 and 2003 which focused on adherence to OHAs and insulin and correlations between adherence rates and glycemic control.(31) The review recorded non-adherence rates ranging from 37%–51% and showed that patients with diabetes were often non-adherent to their treatment, potentially leading to poor health outcomes. The published review data concluded that among patients with diabetes, hypertension, and dyslipidemia, only 59% had adherence rates of a medication possession ratio =80%.(See table 2,3)

Followed by answer No (I don't trust the doctor , the Presence of sensory impairment , No social or peer support , low income ,weak memory , Depression, sense of unusualness , no progress , Insufficient knowledge about medications) of the patients were non-compliant due to the side effects of medication mainly sedation and weight gain. Similarly patients who discontinue prescribed neuroleptic medicine side effects as their primary reason for non-compliance (29). Found hopelessness as a cause of non -compliance to medication in patients . (30) Two studies also reported lack of emotional support and help from family members and friends as the causes of poor drug compliance in the patients (31) are not compliant to medication due to financial problems. This is in accordance with that reported by other study. were non- compliant to medication due to no improvement in the medication. Similarly reported no improvement as a cause of non- compliant to medication .of the non -compliant were due to too much of medication. Similarly were not compliant due to too much of medication as reported. (32)(See Table 4)

Conclusion

Our review is the first systematic review to examine the Prevalence and Risk Factors of Treatment Non-compliance among Elderly Diabetic Patients in Saudi Arabia 2023. Our findings show high levels of both non-adherence and non-persistence to treatment therapy, due to a variety of socioeconomic, patient experience and healthcare factors. Utilizing the factors identified in this review, This study highlighted that medication adherence is influenced by allot factors. Patient counseling is required to improve patient beliefs and increase awareness of adhering to prescribed pharmacotherapy. A pharmacist can play constructive role of a disease educator and patient counselor. Non-compliance is quite common in psychiatric patients. Medical practitioners need to be aware of it and address this problem because compliance is directly related to the prognosis of the illness. A high prevalence of non – compliance is still a problem in the treatment of elderly patients, particularly those who had positive risk factors future studies should investigate potential strategies to identify at-risk patients and develop new methods to increase persistence and adherence by addressing the modifiable risk factors..

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