

## **Common Causes of Medication Non-Compliance among Elderly Patients Attending Health Care Center Makkah City, Saudi Arabia in 2021**

**Mohammed Ameen Bukhari<sup>1</sup>, Ahlam Hamid Alengawi<sup>2</sup>, Leena Ismael shukri<sup>2</sup>,  
MoawadAyed Allihyani<sup>3</sup>, Khaled Adnan S Ali<sup>4</sup>, Dania Mohammed Alahmadi<sup>5</sup>, Bassam  
Gatar Mohammad Al Thagfiy<sup>6</sup>, Hamed Obaid Alqurashi<sup>7</sup>, Asmahan Abdominal I  
Zohwan<sup>8</sup>, Khalaf Radah Alotaibi<sup>9</sup>, Ahmed Abdullah Aalnassri<sup>8</sup>, Hamad Hamdan H  
Alnamani<sup>10</sup>, Ahmed Mohammad Algamdy<sup>10</sup>, Hattan Sameer Mashat<sup>10</sup>.**

<sup>1</sup>General practitioner, King Faisal Hospital, Makkah, Saudi Arabia.

<sup>2</sup>Dental assistant, Al Adel PHC, Makkah, Saudi Arabia.

<sup>3</sup>Nursing technician, public health Cluster, Makkah, Saudi Arabia.

<sup>4</sup>Microbiology Specialist, King Faisal Hospital in Makkah, Saudi Arabia

<sup>5</sup>Social work, King Abdulsziz Hospital, Makkah, Saudi Arabia.

<sup>6</sup>Nursing Technician, Affairs in the Makkah region, Saudi Arabia.

<sup>7</sup>Nursing Technician, Directorate of Health Affairs in Makkah Al-Mukarramah, Saudi  
Arabia.

<sup>8</sup>Nursing Technician, BathaQuriesh, Makkah, Saudi Arabia.

<sup>9</sup>Health informatics Technician, Makkah, Saudi Arabia.

<sup>10</sup>pharmacy technician, King Abdulaziz Hospital, Makkah, Saudi Arabia.

### **Abstract:**

#### **Background:**

Medication adherence in elderly patients can have significant differences confute to conclude that medication adherence is required to be more explored, and then, beneficial interventions develop to decrease these barriers .Some of the main barriers elderly patients compliance with pharmacological therapy The barriers to medication adherence included four concepts, namely, lifestyle challenges, patient incompatibility, forgetting of medicine use, and no expert advice. These concepts are always present in the disease process and reduce the elderly patients ' efforts to achieve normal living and adhere to the medication. Medication non-adherence when elderly patients don't take their medications as prescribed is unfortunately fairly common, especially among elderly patients with chronic disease. Most

non-adherence is intentional patients make a rational decision not to take their medicine based on their knowledge, experience and beliefs There are many reasons for non-compliance with in elderly patients for medication .

**Aim of the study:** To assessment of Common causes of medication non-compliance among elderly patients attending health care center Makkah City, Saudi Arabia in 2021

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

**Results:** Regarding the age majority of the study groups were in the age range of (>70.0%) years were (40.0%) , regarding the gender many of the respondents were male (66.0 %) while female were (34.0%). Regarding the education status, the majority of the respondents had elderly patients degree were (33.0%). Regarding the income The majority of them had an income from (3000-6000SR) were (33.0% ) while Occupation the most of the participants answer No were (58.0%).

**Conclusion:**There are numerous studies on Common reasons for drug noncompliance in elderly patients over the years the factors related to compliance may be better categorized as factors as the approach in countering their effects may differ. The study also highlights that the interaction of the various factors has not been studied systematically. Future studies need to address this interaction issue, as this may be crucial to reducing the level of non-compliance in general, and to enhancing the possibility of achieving the desired healthcare outcomes.

**Keywords:** Common ,causes , drug , noncompliance , elderly patients , attending , outpatient clinics, PHC.

## **Introduction**

### **Background**

Non-compliance characterized as accepting meds as exhorted and recommended by health care experts for expressed duration.[1]

Medicine adherence can be characterized as a cessation or disappointment of appropriate prescription admission without earlier endorsement from the rewarding doctor .[2]

In health care, the commune generally used definition of compliance is “elderly patient’s behaviors (in phrases of taking treatment , following changes eating style or modification heaped , Physiotherapy or executing life style changes) coincide with healthcare providers’ hints for fitness and scientific advice”.[3] That disappointment of elderly patients to

consistence with the medication is a significant issue if there should arise an occurrence of mental patients. Non-compliance of elderly patients with recommended medication is considered as a boundary to compelling medicinal services. [4]

As of late, the expression "concordance" is additionally recommended to be utilized. Contrasted and "consistence", the term concordance settles on the elderly patients the decision-maker and means patients-prescribers understanding and congruity. [6]

A definitive point of any endorsed clinical treatment is to accomplish certain ideal results in the patients concerned. These ideal results are an integral part of the targets in the administration of the illness or conditions [7]

Result of unseen or unreported therapeutic non-compliance, doctors could modification the plan, which can increase the value or quality of the treatment, therefore additional increasing the burden on the care system.[8] in addition , so as to formulate effective methods to contain the matter of non-compliance, there's a desire to consistently review the factors that contribute to non-compliance. Associate understanding of the prophetic worth of those factors on non-compliance would conjointly contribute absolutely to the designing of any sickness management program. [9]

In additional, in spite of all the best expectation and endeavors with respect to the medicinal services experts, those results probably won't be attainable if the elderly patients are non-compliant . This deficiency may likewise have genuine and adverse impacts from the viewpoint of illness management. Also therapeutic compliance has been a subject of clinical worry since the 1970s because of the broad idea of non-compliance with medication. Helpful consistence incorporates quiet consistence with medicine as well as with diet or way of life changes.[10]

A study was done in Al Hasa region in Eastern Province of KSA that detailed a high level of Non-compliance to hostile to diabetic prescriptions (65–69%) in patients going to a diabetic center .[11] Another investigation was directed to report medicine adherence among elderly Saudi patients in the city of Khoper situated in Eastern Province of Saudi Arabia, utilizing the General Medication Adherence Scale (GMAS) . By recording the adherence example of type II diabetic patients in Khoper . [12]

Many factors will have an effect on general poor compliance such as: misunderstanding of prescribed directions, frequent changes to drug regimens, multiple health care suppliers prescribing treatment , restricted religion within the drug , forgetfulness, physical difficulties limiting access to or use of medication, restricted education concerning the unhealthiness or the necessity for treatment , few symptoms, chronic unhealthiness, a sophisticated program,

polypharmacy (use of multiple medications for the treatment of a patient's medical conditions), value of medication, and real or perceived adverse drug reactions .[13,14]

### **Review of literatures**

First, 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.[16]

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]

Thus, therapeutic non-compliance happens once support degree individual's health-seeking or maintenance behavior lacks congruity with the recommendations as prescribed by a medicinal services supplier.[19] Alternative similar terms are used rather than compliance, and the significance is pretty much indistinguishable. For instance, the term adherence is regularly utilized reciprocally with consistence. Adherence is outlined because the ability and disposition to abide by a prescribed therapeutic plan.[20]

Before we are able to formulate ways to tackle the problem of difficulty drug non-compliance, we'd like to evaluate the clinical and alternative implications of therapeutic non-compliance.[21]From the attitude of tending suppliers, drug compliance may be a major medical problem for 2 causes. [22]

Furthermore, other than direct budgetary effect, drug non-compliance would have indirect price suggestions because of the loss of profitability, without referencing the significant negative impact on patient's nature of life.[23]

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 discipline to treatment as a result of declining psychological capacity. [24]

The outlook of the patient towards the illness is additionally an important issue that may cause therapeutic non – compliance. Mostly, studies have shown that patients with a positive perspective and a supportive environment measure following instructions directions than those living alone and being depressed. [25] significantly true for patients World Health Organization have an extended -standing history illness .[26]

As several as two hundred factors are hypothesized to influence compliance and these factors will be classified as either intentional or unintentional. Intentional non-compliance is related to motivation and elderly patients beliefs regarding taking treatment .[27] Conversely, unintentional non-compliance is expounded to elderly patients understanding of directions or their ability to require their drug. There is also an overlap between these classes (e.g., folks that have an occasional perceived necessity for his or her medication might even see it as less salient and should be a lot of seemingly to forget to require their medications). [28]

## **Rationale**

Medication non-compliance is an ignored health problem in developing countries, It is one of the challenging global issues; non-adherence to medication results in active disease progression and increased treatment costs which have an alarming average of less than 50% of patients complying with medication instructions. Such non-compliance is considered a major challenge to effective management of most chronic diseases such as diabetes mellitus, hypertension, and dyslipidemia.

## **Aim of the study**

To assessment of Common causes of medication non-compliance among elderly patients attending health care center Makkah City, Saudi Arabia in 2021.

## **Specific objective**

- To assessment of Common causes of medication non-compliance among elderly patients attending health care center Makkah City, Saudi Arabia in 2021.

## **Methodology**

### **Study setting:**

This study has been conducted among elderly patients attending health care center Makkah City, Saudi Arabia in 2021.

### **Study Population**

The study population consists of elderly patients Saudi out patients clinics aged 60-80 years attending to outpatient attending health care center Makkah City, 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 7 (50), 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 Makkah City, 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 250.

### **2.7 Sampling Technique:**

Makkah City Regarding health care center selection, there are three health care sectors inside Makkah Al-Mukarramah which are Al-Ka'akya, Al-Zahir and Al-Adl. By using simple random sample technique (by using randomizer.org), Al-Adl health care sector was selected. There are 12 primary health care centers under Al-Adl health care sector which was enumerated from 1 to 12. Again, by using simple random sample technique Al-Adl primary health care center was selected (by using randomizer.org website). Regarding patients' selection, the total number visiting Al-Adl PHC is 1711 per month and the sample size is 200.

The data collection period is 20 days (four weeks minus weekends). Every day there are nearly 85 patients attending in Al-Adl PHC in both section (male and female sections). To collect data from sample size, the researcher needs nearly 18 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:**

Makkah city the total number of elderly patients attending Al-Adl primary health care center (under Al-Adl health care sector) in one month is 1711. 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 Makkah City The researcher has filled the questionnaires through the interview with patients who are attending elderly patients attending health care center Makkah City met the inclusion criteria after taking their verbal consent. After obtaining necessary approvals, the researcher and one trained nurse used anSince all Makkah 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  $\chi^2$  test of independence, has been used, as necessary. The Statistical Package for Social Sciences (SPSS) software for MS- version-20 will be used for the analysis. All tests has been conducted at level of significance  $\alpha=0.05$ ; 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 in Makkah, shall be obtained prior to the study .

A written consent has been obtained both from PHC, Makkah region 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.

### Results

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

	N	%
<b>Age</b>		
50-60	76	38
60-70	44	22
>70	80	40
<b>Gender</b>		
Female	68	34
Male	132	66
<b>Education</b>		



Illiterate	20	10
Primary	24	12
Preparatory	66	33
Secondary	36	18
University	54	27
<b>Occupation</b>		
Yes	84	42
No	116	58
<b>Income</b>		
Less than 3000SR	38	19
3000-6000SR	66	33
6000-9000SR	50	25
More than 9000SR	46	23

Regarding the age majority of the study groups were in the age range of (>70.0%) years were (40.0%) , regarding the gender many of the respondents were male (66.0 %) while female were (34.0%). Regarding the education status, the majority of the respondents had elderly patients degree were (33.0%). Regarding the income The majority of them had an income from (3000-6000SR) were (33.0% ) while Occupation the most of the participants answer No were (58.0%).

**Table (2) description presence of chronic disease, duration of chronic disease , number and type of drugs among the elderly patients**

	<b>N</b>	<b>%</b>
<b>chronic diseases</b>		
No	44	22
<b>Yes</b>	156	<b>78</b>
Heart disease	39	25.00
Diabetes	58	37.18
Hypertension	69	44.23
Renal disease	19	12.18
Liver disease	12	7.69

Blood diseases	5	3.21
Immunological diseases	11	7.05
High fat and cholesterol	64	41.03
Hypothyroidism	13	8.33
asthma	23	14.74
IBS	20	12.82
Other than that	28	17.95
<b>Duration of chronic disease</b>		
Less than 5 years	66	42.31
5-10.	47	30.13
More than 10	43	27.56
<b>Number of drugs</b>		
1-3.	100	64.10
4-6.	37	23.72
6 or more	19	12.18
<b>Type of drugs</b>		
pills	112	71.79
sprayer	19	12.18
injection	34	21.79
drink	28	17.95
Non	32	20.51
<b>Are you regularly committed to taking medications?</b>		
No	30	19.23
Some time	54	34.62
Yes	72	46.15
<b>Did you forget to take your medication on time sometimes?</b>		
No	55	35.26
Yes	101	64.74
<b>Are you not interested in taking your medicines on time?</b>		
No	125	80.13
Yes	31	19.87
<b>If I feel better, sometimes I stop taking medicines?</b>		

No	69	44.23
Yes	87	55.77
<b>If I feel bad when I take the medicine sometimes, will I stop taking it?</b>		
No	96	61.54
Yes	60	38.46

Regarding the majority of the study have who suffer from chronic diseases their percentage were (78.0 %). also the study showed that most of them suffer from Hypertension thin High fat and cholesterol thin Diabetes were their percentage was respectively (44.23% , 41.03% , 37.18% ) followed by not have chronic diseases percentage were (22.0 %).

Regarding the duration of chronic disease the majority of the Participants who suffer from the disease less than 5 years percentage were (42.31%) followed by More than 10 were(30.13%).

Regarding the number of drugs the majority of the Participants who takes 1-3 drugs percentage were (64.10 %). Regarding the type of drugs the majority of the Participants who takes pills percentage were (71.79%)

Regarding regularly committed to taking medications the majority of the Participants They were committed to taking medicines the percentage were (46.15%) followed by some time percentage were (34.62%).

Regarding you forget to take your medication on time sometimes the majority of the Participants They were forget taking medicines the percentage were (64.74%) . Regarding you not interested in taking your medicines on time the majority of the Participants No, I'm interested taking medicines on time were the percentage were (80.13%) followed by Yes interested in taking medicines on time the percentage were (19.87%). Regarding if I feel tired you will stop taking medication the percentage Yes were (55.77% ) in stopping taking and not stopping taking medication. Regarding If I feel bad when having I taking the medicine sometimes will I stop taking medicine. The majority of the Participants I did not stop percentage were (61.54% ) , followed by yes i will stop the percentage were (38.46% ).

**Table (3) Description common reasons of drug noncompliance related factors (elderly patient, medication, health care related factors).**

	Yes		No		Chi-Square	
	N	%	N	%	X <sup>2</sup>	P-value

<b>Patient related factors:</b>						
Low income	31	33	169	84.5	95.220	0.000
Presence of sensory impairment	17	19	183	91.5	137.780	0.000
Weak memory	38	40	162	81	76.880	0.000
Insufficient knowledge about medications	53	55	147	73.5	44.180	0.000
Depression, sense of unusualness	30	32	170	85	98.000	0.000
No progress.	38	40	162	81	76.880	0.000
No social or peer support.	26	28	174	87	109.520	0.000
I don't trust the doctor.	13	15	187	93.5	151.380	0.000
<b>Medication related factors</b>						
Too much medication.	49	51	151	75.5	52.020	0.000
Too long time.	42	44	158	79	67.280	0.000
Complexity of medication.	28	30	172	86	103.680	0.000
Improper timing.	40	42	160	80	72.000	0.000
Not available.	36	38	164	82	81.920	0.000
<b>Health care relate factors</b>						
Negative physician attitude.	13	15	187	93.5	151.380	0.000
Less availability of health centers.	24	26	176	88	115.520	0.000
<b>Patients suggest enhancing his compliance</b>						
Change the form of drug.	60	62	140	70	32.000	0.000
Regulate the time of doses.	86	88	114	57	3.920	0.048
Multidrug in one bill.	82	84	118	59	6.480	0.011
Take advice from more than one doctor.	51	53	149	74.5	48.020	0.000
Social and emotional support	73	75	127	63.5	14.580	0.000

**Regarding Patient related factors** the majority of the Participants answer Yes the ( Insufficient knowledge about medications , no progress , depression sense of unusualness , weak memory the percentage was respectively (75.0%, 79.0% , 86.0% , 80.0%) %) 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) the percentage were  $X^2$  respectively

(95.220,137.780,76.880,44.180,98.000,76.880,109.520 and 151.380 ). All item related to elderly Patient related factors a significant relation between  $P$ -value=0.001 .

**Regarding Medication related factors** the majority of the Participants answer Yes the Too much medication, Too long time , Not available , Improper timing ) percentage were respectively (51.0%, 44.0% , 38.0% , 42.0%) followed by answer No (I Complexity of medication , Improper timing , Not available , Too long time , Too much medication ) the percentage were respectively were  $X^2$  (52.020,67.280,103.680,72.000 and 81.920 ). All item related to medication related factors a significant relation between  $P$ -value=0.001

**Regarding Health care relate factors** the majority of the Participants answer No the (Negative physician attitude ,Less availability of health centers ) percentage were respectively (93.75 % , 88.0 % ) followed by answer Yes (Less availability of health centers, Negative physician attitude ) the percentage were respectively  $X^2$  respectively (151.380, 115.520). All item related to elderly Health care relate factors a significant relation  $P$ -value=0.001

**Regarding Patients suggest enhancing his compliance** the majority of the Participants answer Yes the (Social and emotional support, Multidrug in one bill

Regulate the time of doses, Change the form of drug ) percentage were respectively  $X^2$  (32.000,3.920,6.480,48.020 and 14.580). All item related to Patients suggest enhancing his compliance a significant relation  $P$ -value=0.001

**Figure (1)elderly Patient related factors**

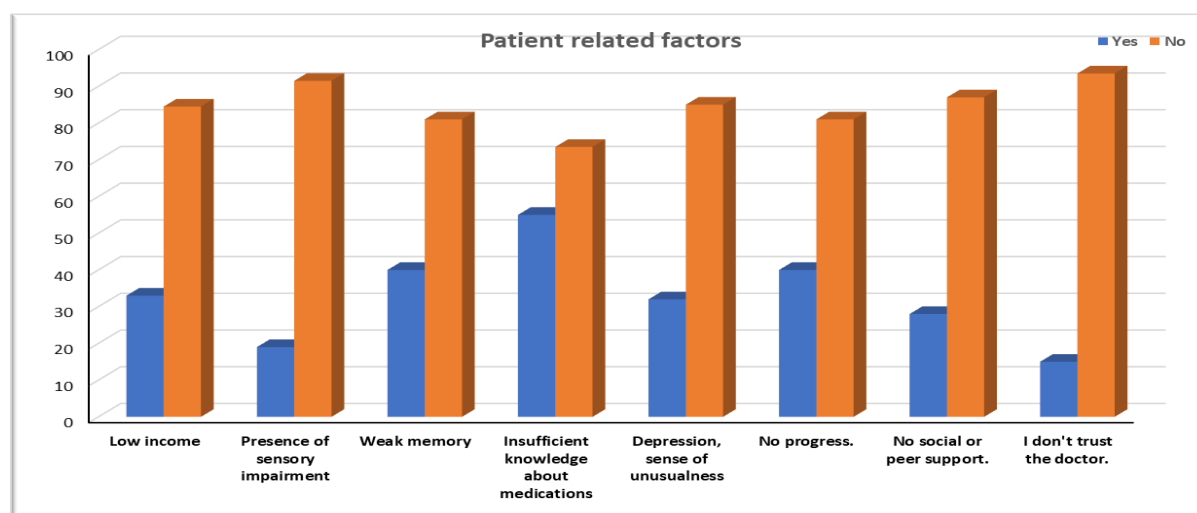


Figure (2) Medication related factors

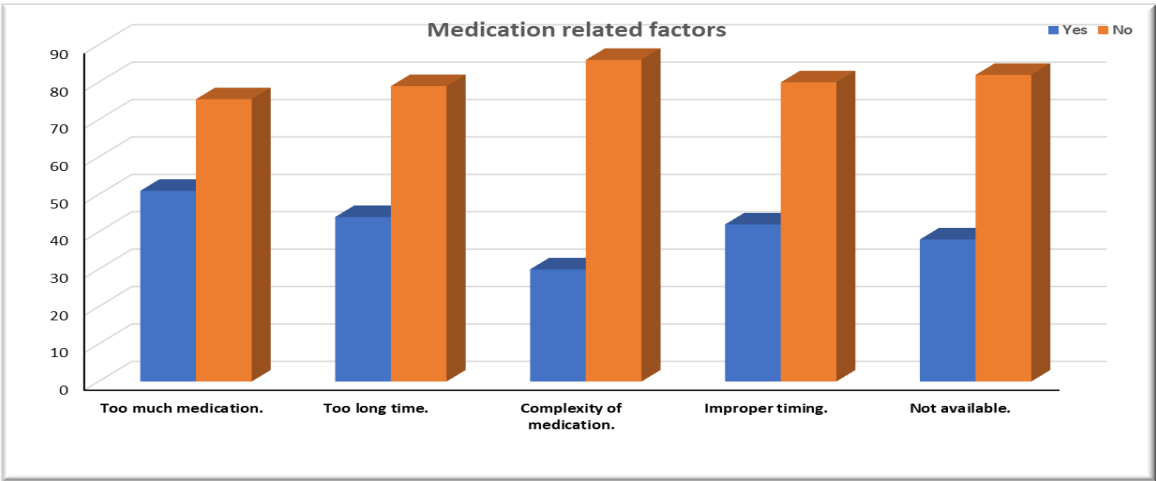


Figure (3) Regarding Patients suggest enhancing his compliance

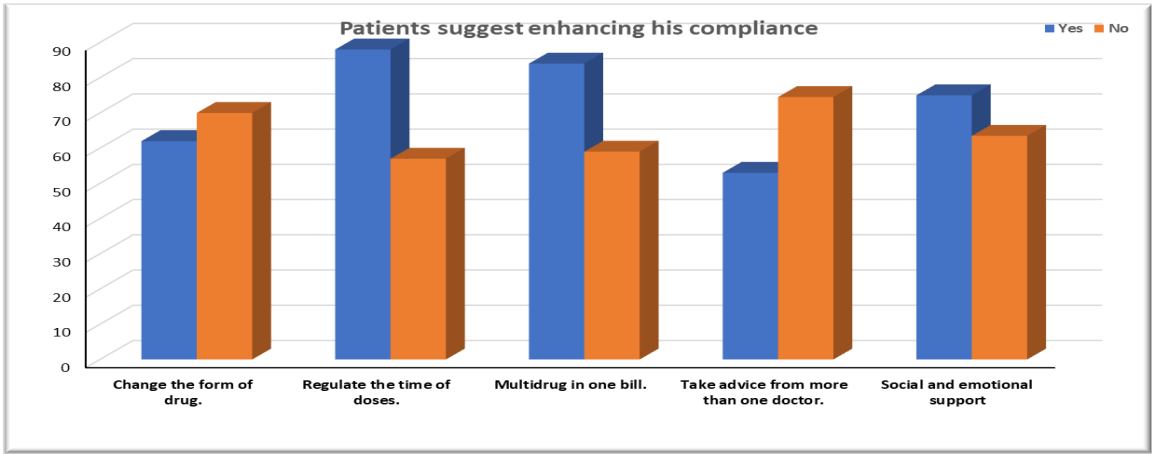
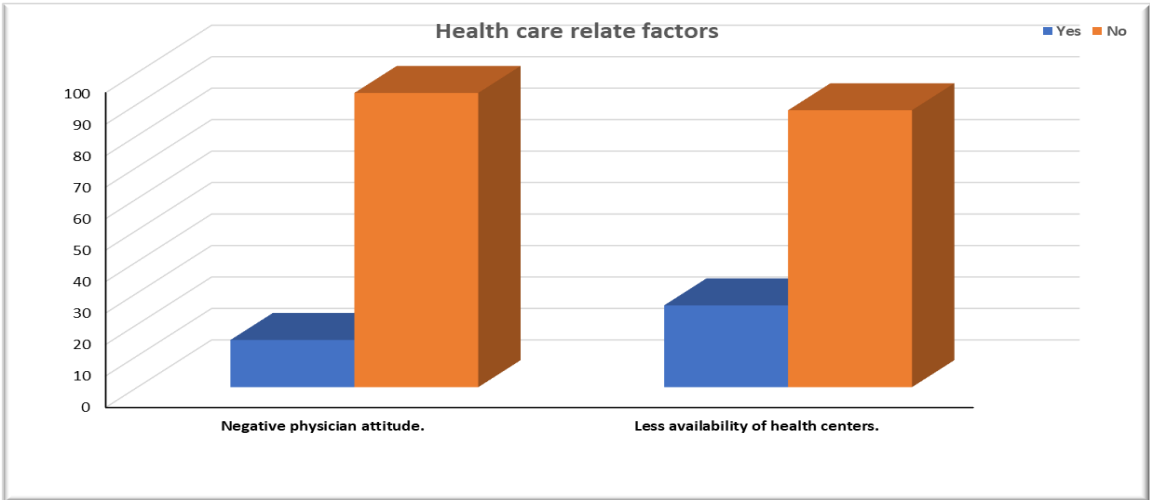


Figure (4) Health care related factors



## Discussion

the study shows the socio-demographic details included (200) participant elderly patients who are attending health care center Makkah City Were enrolled in this study common reasons of drug noncompliance related factors (patient, medication, health care related factors).( Insufficient knowledge about medications , no progress , depression sense of unusualness , weak memory.

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 2,3)

## Conclusion

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. Further studies are needed to reduce non-compliance .

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