## RESEARCH ARTICLE

## ASSESSMENT OF PUBLIC SATISFACTION AND TREATMENT TOWARD PHC AND PUBLIC PRIVATE HOSPITAL IN EASTERN PROVINCE, KSA.

**Hassan A. Alashwan[1], Redha A. Alsaleh[1], Ahmed M. alshakhs[1], Mustafa S. Alfehaid[1], Abdullah J. Almajed[1], Huda A. Alsaleh[1], Maryam K. Almumten[1] and Nabil M. Kurashi[2].**

1. College of medicine at university of Imam abdurahman bin faisal.
2. College of medicine, department of family and community medicine, imam abdurahman bin faisal university, Saudi Arabia.

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| *Manuscript Info* | *Abstract* |
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**Objectives:-**
1. To determine the compliance and satisfaction to doctor's prescription among general population in Eastern Province of Saudi Arabia by type of health facility used, age, gender, and education.
2. To determine the reasons for non-compliance, and opinions on how to improve compliance.

**Materials and Methods:-**
Cross-sectional study conducted for public in eastern province. Data Collected using web-based self-administered questionnaire to fill online through newspaper, and social media like Facebook, Twitter, etc. for 6 month and periodically repeated throughout the study period, SPSS 17.0 used for data analysis. Chi-square or Fisher's Exact test used to test for statistical significance by gender, age, and education.

**Background:-** Compliance in healthcare is defined as the extent to which a patient's behavior coincides with the healthcare provider's recommendations for health and medical advice, we conduct unique study to involve the public instead of narrow spectrum of patient and diseases.

**Results:-** Total of 587 participants 62.9% were Satisfied during last visit to their physician. 32.2% stop taking medication if they feel better, 31.7% always committed to treatment. The reasons of non-compliance with medication mainly 35.6% due to large number of drugs, 28.3% due to Inappropriateness of drug, 20.8% do not Know the function of drug. the more acuteness of illness more noncompliance, avoiding reading the patient file and lack of knowledge. More than half of participant said doctor misbehavior affect their trust about prescription. Private hospital showed to have more regular visit and satisfaction and governmental hospital showed less satisfaction. 58.8% said that nearby health centers would not affect their compliance. 78% of the Health Centers lack communication with patient outside health facility. The best option to overcome non- compliance showed to be follow-up by social media.

**Corresponding Author:- Hassan A. Alashwan.**
Address:- College of medicine at university of Imam abdurahman bin faisal.

**Conclusion:-** Males and people at age of 30 are more compliance to drugs and more satisfied. Side effect and accumulated drugs are common cause of non-compliance, best option to overcome non-compliance are follow up by social media and explain side effects of drugs , people less satisfied with governmental hospital and more compliance to PHC so high qualified health system, patient -centered relationship, health education are needed.

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## Introduction:-

Compliance in healthcare is defined as the extent to which a patient's behavior (in terms of taking medication, executing the lifestyle changes, undergoing medical tests or keeping appointments with the physicians) coincides with the healthcare provider's recommendations for health and medical advice. **[1]** Non-compliant patients are those whose health-seeking or maintenance behaviors lack congruence with the recommendations prescribed by a healthcare provider. **[2]**

Patient non-compliance is a serious healthcare concern that poses a great challenge to the successful delivery of healthcare. This is widespread and has been reported from all over the world.

Previous research of specific communication variables indicates that patient-centered encounters result in: (1) the duration of the office visit remaining the same **[3]**, **[4]** (2) better patient satisfaction, **[5]** (3) higher physician satisfaction, and (4) fewer malpractice complaints.

Medication management outcomes can be improved by adopting more client-centered approaches. To examine the implications of a client-centered relationship this reviews regarding client involvement in: (1) identifying treatment goals; (2) choosing from regimen options; (3) monitoring symptoms and evaluating regimens; and (4) self care with nonprescription pharmaceutical products. **,** A compliance study conducted in Saudi Arabia for those on short-term medication found 67.8% compliance.

However, compliance of patients tends to decrease with time being lower in patients on long-term medication than in those on short-term medication. **[6]** Another study done in Saudi Arabia found an overall 65.8% non-compliance in patients suffering from hypertension. **[7]** The noncompliance to long-term therapy severely compromises the effectiveness of treatment and adversely affects the patient's condition. **[8]**

## Materials and Methods:-

**Study population and area:-** Population of Eastern Province.
**Study design:-** Cross-sectional study
**Study period:-** Six months until 12-1- 1438 H
**Data Collection:-** Data Collected using web-based self-administered questionnaire. The information collected included demographic data, type of health facility visited, satisfaction with last visit to physician, compliance to doctor's prescription, use of medicine without doctor's prescription, questions related to reasons for non-compliance, and suggestions to improve compliance to doctor's prescription.

The public in the study area was informed about this survey (along with the web link) and requested to fill the online questionnaire through newspaper, and social media like Facebook, WhatsApp, Twitter, etc. This was periodically repeated throughout the study period

**Data Analysis:-** SPSS 17.0 used for data analysis. Descriptive statistics included frequency and percentages for categorical variables. Chi-square or Fisher's Exact test, as appropriate, used to test for statistical significance by gender, age, and education. The sample size using Epi info version 3 with confident level 97% is 471. The results were expressed as mean values $\pm$ SD. A P value of $< 0.05$ was considered significant.

## Results:-

Total of 587 participated in this study, 79.5% of the participants were from the Alhasa and Dammam and Qatif. Majority of participants their age Found to be between 21-30 years (SD=1.11) and about two third of them were females (74.7%). All the participants were educated (100%, n = 587).

The demographic characteristics of the participants are summarized in Table 1 and Geographic distribution in figure 1

**Table 1:-** Demographic characteristics of the study population.

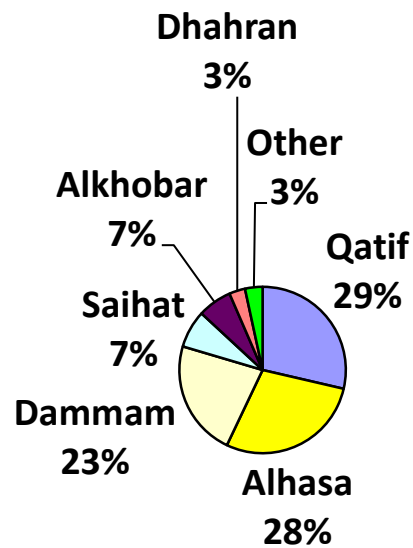| Characteristic | Number | Percentage |
|---|---|---|
| Gender | | |
|     Male | 148 | 25.2 |
|     Female | 439 | 74.8 |
| Age (Years) | | |
|     $\leq 20$ | 126 | 21.5 |
|     21-30 | 259 | 44.2 |
|     31-40 | 103 | 17.6 |
|     $> 40$ | 99 | 16.9 |
| Education | | |
|     High school  or less | 126 | 21.4 |
|     College or higher | 461 | 78.5 |
| Nationality | | |
|     Saudi | 574 | 97.8 |
|     Non-Saudi | 13 | 2.2 |



## Figure 1 :Geographic distribution

According to geographic distribution as shown in figure 1,  29% of participants from Qatif , 28% from Alhasa , 23% from Dammam , 7% from Saihat  , 7% from Alkhobar, 3% from Dhahran , 3% others.

## Figure 2:Satisfaction during last visit to the doctor by gender
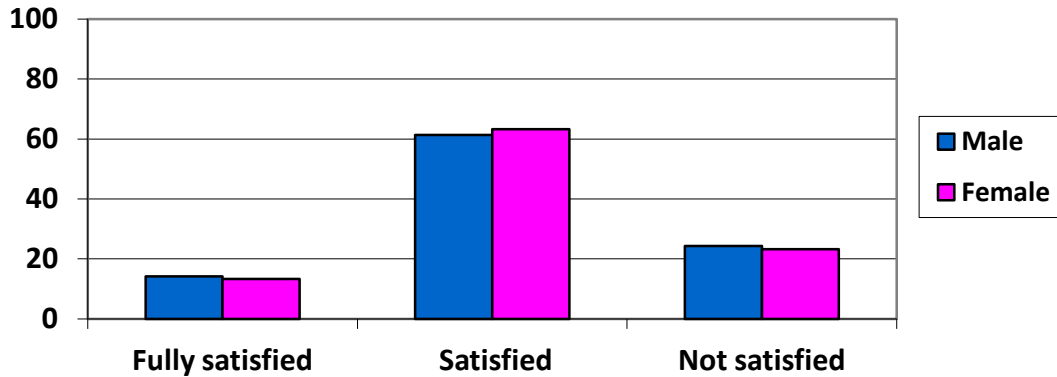


According to satisfaction during last visit to doctor by gender as shown in figure 2, 14.18% of male and 13.34% of female are fully satisfied while 61.4 of male and 63.3 of female are satisfied and 24.32% of male and 23.23% of female are not satisfied.
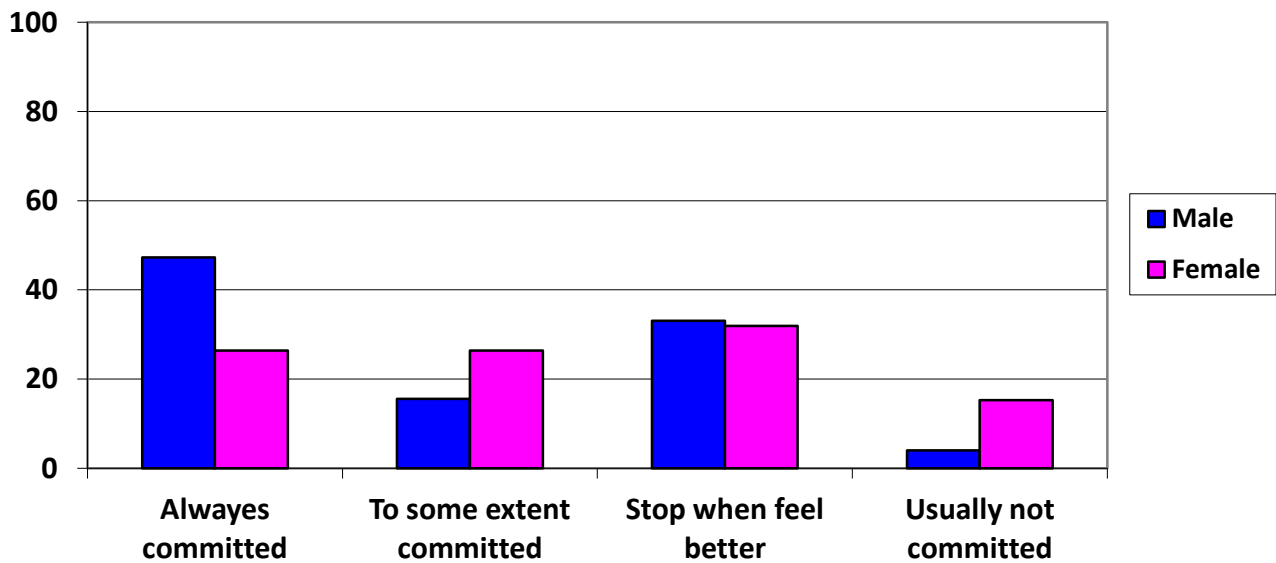


**Figure 3:-** percentages of compliance to drugs the doctor prescribed by gender.

According to compliance to drugs the doctor prescribed by gender as shown in figure 3, males more committed 47.29% than females 26.4% and 15.54% of males and 26.4% of females said they committed to some extent and 33.1% of males and 31.89% of females said they stop taking medication when they feel better and females more not committed 15.26% compared to males 4%, this comparison chart are statistically significant (p<.001).
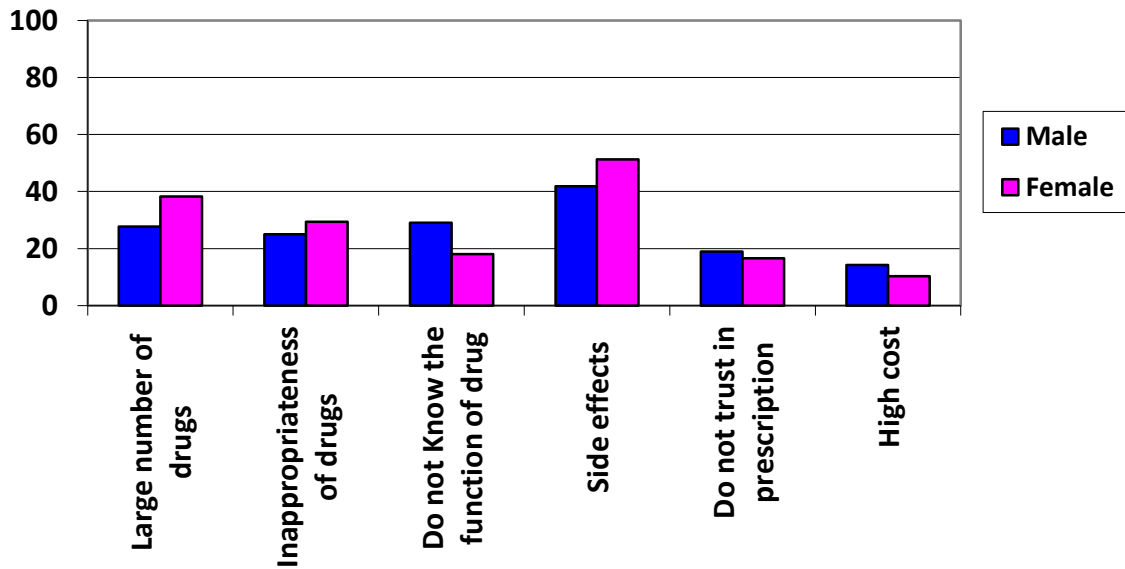
**Figure 4:-** The opinion of participants of what are the reasons which may lead to failure in compliance with medication by gender.

According to opinion of participant of what are the reasons which may lead to failure in compliance with medication showed that females are more non-compliance to treatment due to large number of drugs 38.3% compare to males 27.7%(p<.012) also due to inappropriateness of drugs 29.4% compared to males 25% , 29.1 % of males said that lack of knowledge about function of drugs contribute to their non-compliance to drugs compared to 18% of females (p<.04), side effects contribute to non-compliance in 41.9% of males compared to 51% of females (p<.03), distrust of doctor prescription contribute to non-compliance in 18.9% of males compared to 16.6% of females , high cost of drugs contribute to non-compliance in 14. 2% of males and 10.3% in females.

## Figure 5:The diseases that patients may stop taking medication for
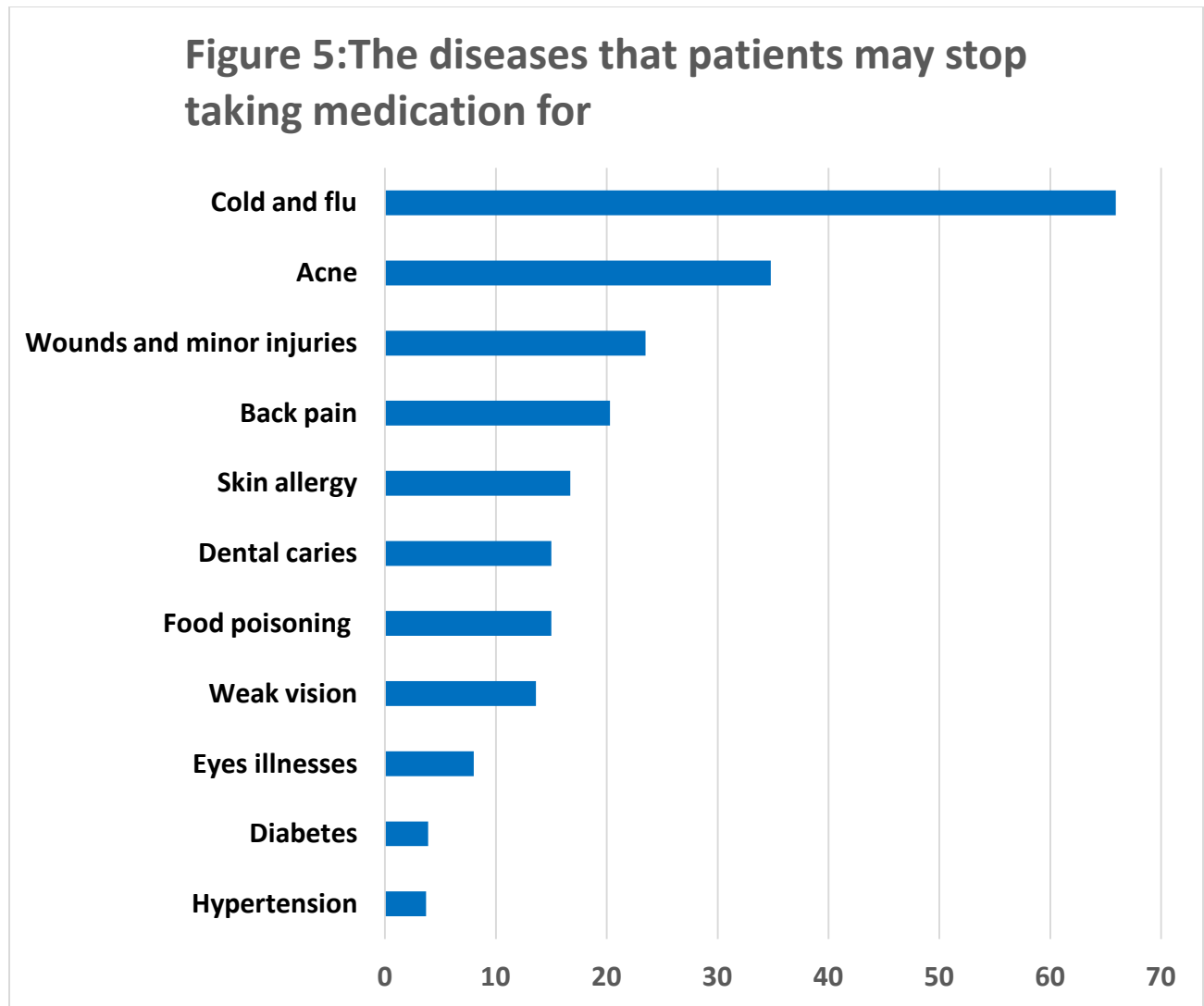


According to above figure 5 showed that 65.9% of participants said that cold and flu in the top of diseases that they left treatment for followed by Acne 34.8 %(p<.002) , wounds and minor injuries 23.5%, back pain 20.3%,skin allergy 16.7%, dental caries 15%, food poisoning 15% , weak vision 13.6%(p<.029),eye illnesses 8%,diabetes 3.9%,hypertension 3.7%..

# Figure 6:patients' opinion regarding the possible solutions to overcome the non-compliance with medication
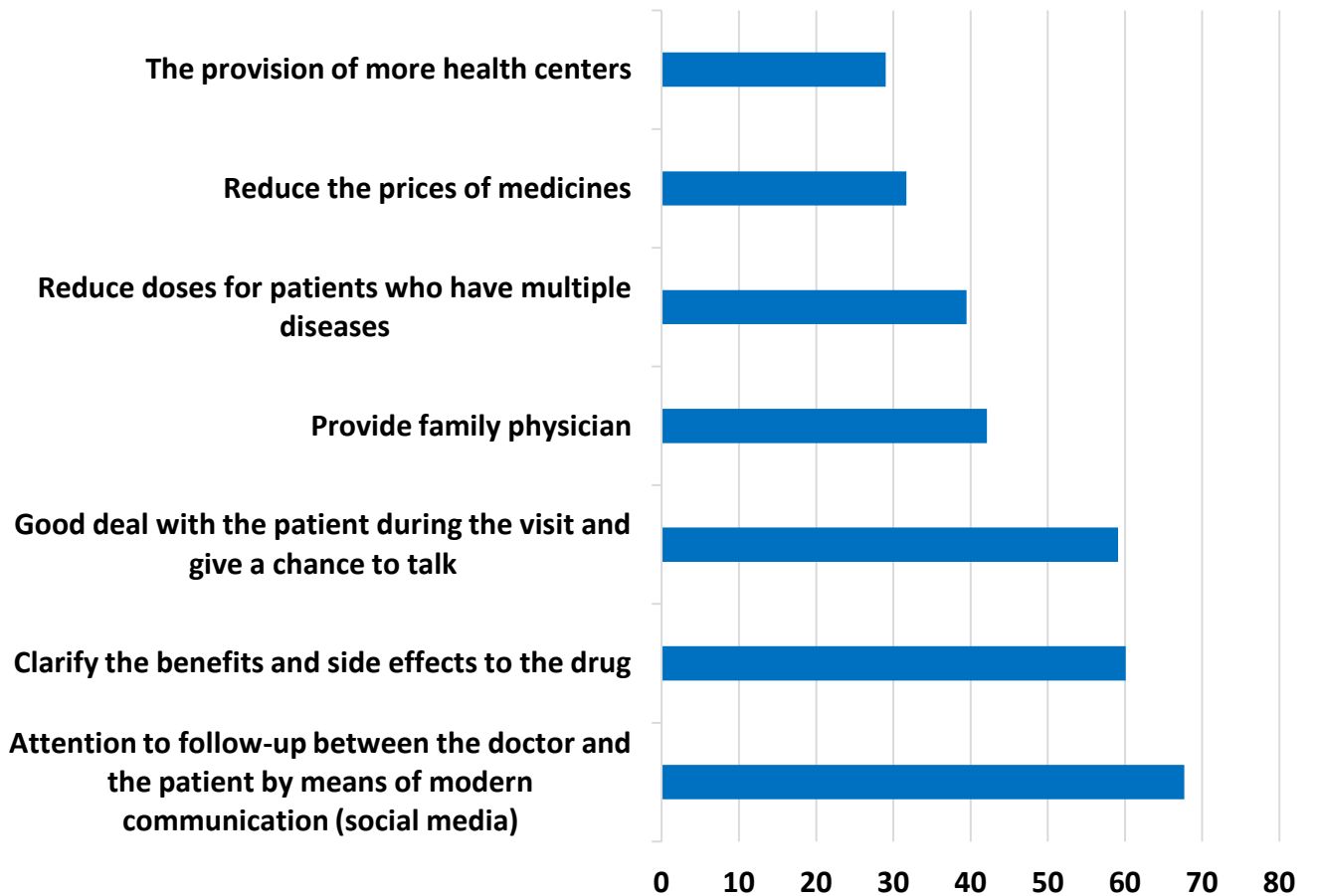


According to patients' opinion regarding the possible solutions to overcome the non-compliance with medication in figure 6 showed to be follow up by social media 67.6% followed by clarification of side effects 60.1%, give chance to talk 59.1%(p<.01, more in males), provide more family physician 42.1% , reduce the number of doses who have multiple diseases 39.5%(p<.001, more in females) , reduce the prices of drugs 31.7%(p<.04 , more in females), provide more health centers 29%.

## Figure 7: satisfaction by health facility
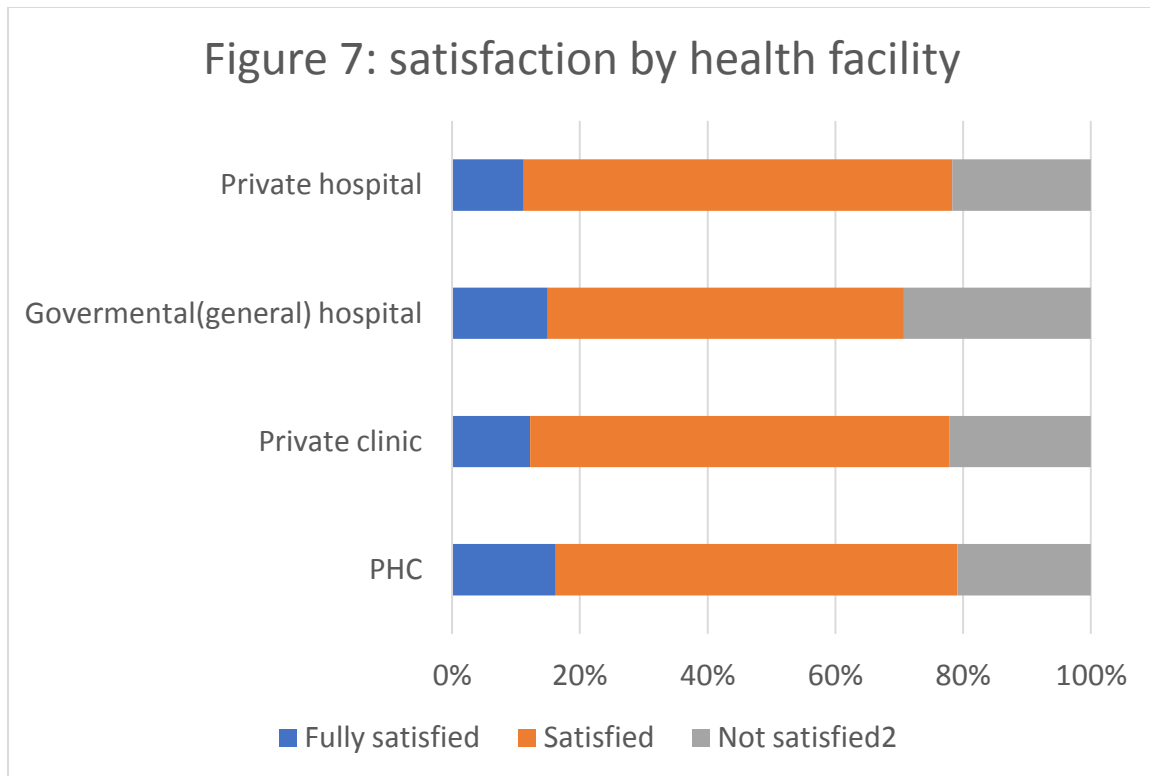


According to satisfaction by health facility in figure 7 showed that the most  fully satisfied health facility is PHC (primary health care center) 16.2% followed by governmental  hospital 15% ,private clinic 12.2% , private hospital 11.2% and the most satisfied health facility is private hospital 67.1% followed by private clinic 65.6%, PHC 62.8% , governmental hospital 55.8%, the most not satisfied health facility is governmental hospital followed by private clinic 22.1%,private hospital 21.7%, PHC 20.9%.

Figure 8: compliance by health facility
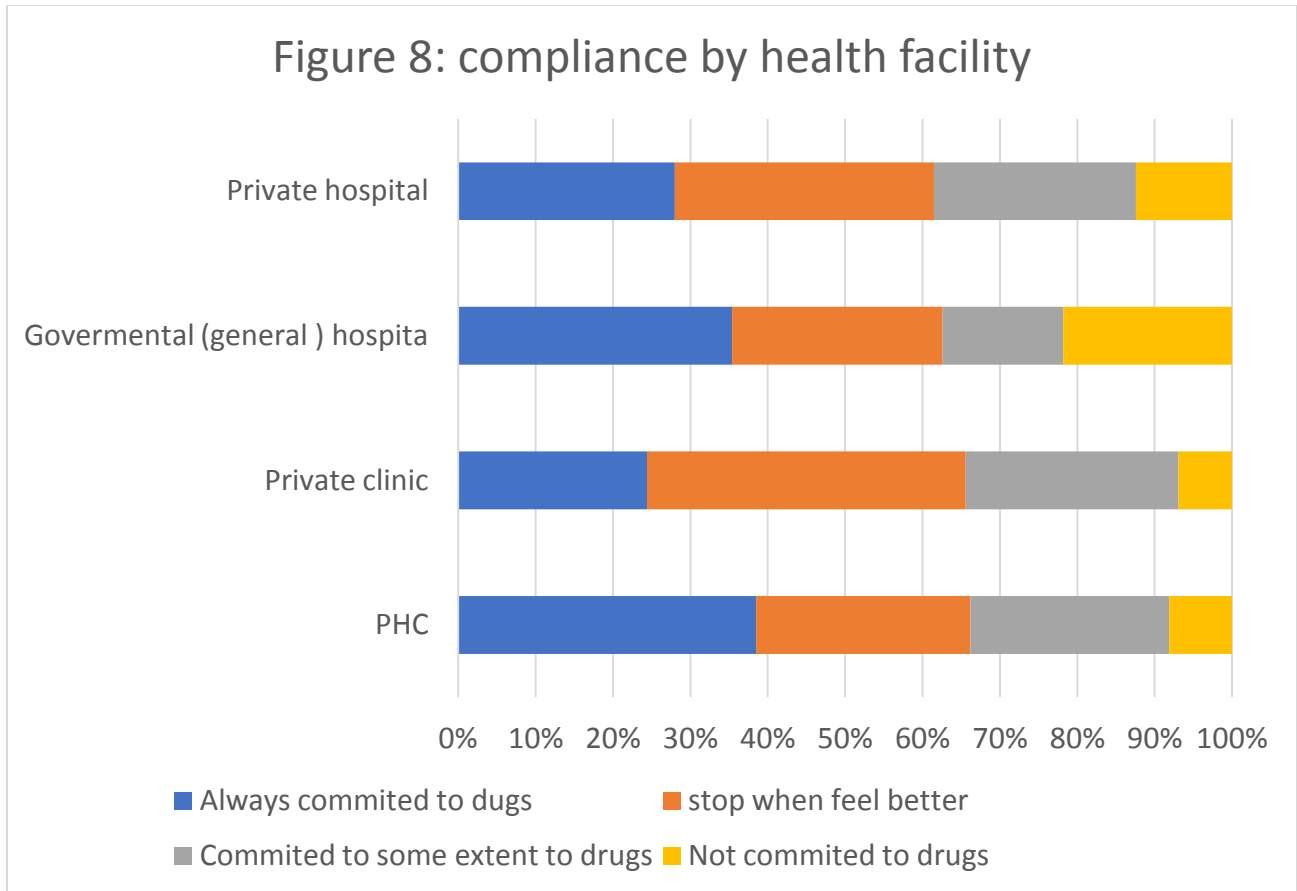
According to compliance by health facility as shown in figure 8, participants are more compliance to PHC 38.5% followed by governmental hospital 35.4%, private hospital 28%, private clinic 24.4 and participants stop taking medication prescribed by doctor more in private clinic 41.2% followed by private hospital 33.5%, PHC 27.7%, governmental hospital 27.5% and participants committed to some extent to drugs more in PHC 25.7% followed by private clinic 27.5%, private hospital 26.1%. governmental hospital 15.6% and the health facility that have high rate of noncompliance to drugs found to be governmental hospital 21.8% followed by private hospital 12.4%, PHC 8.1%, private clinic 6.9%, this comparison chart are statistically significant (p<.001).
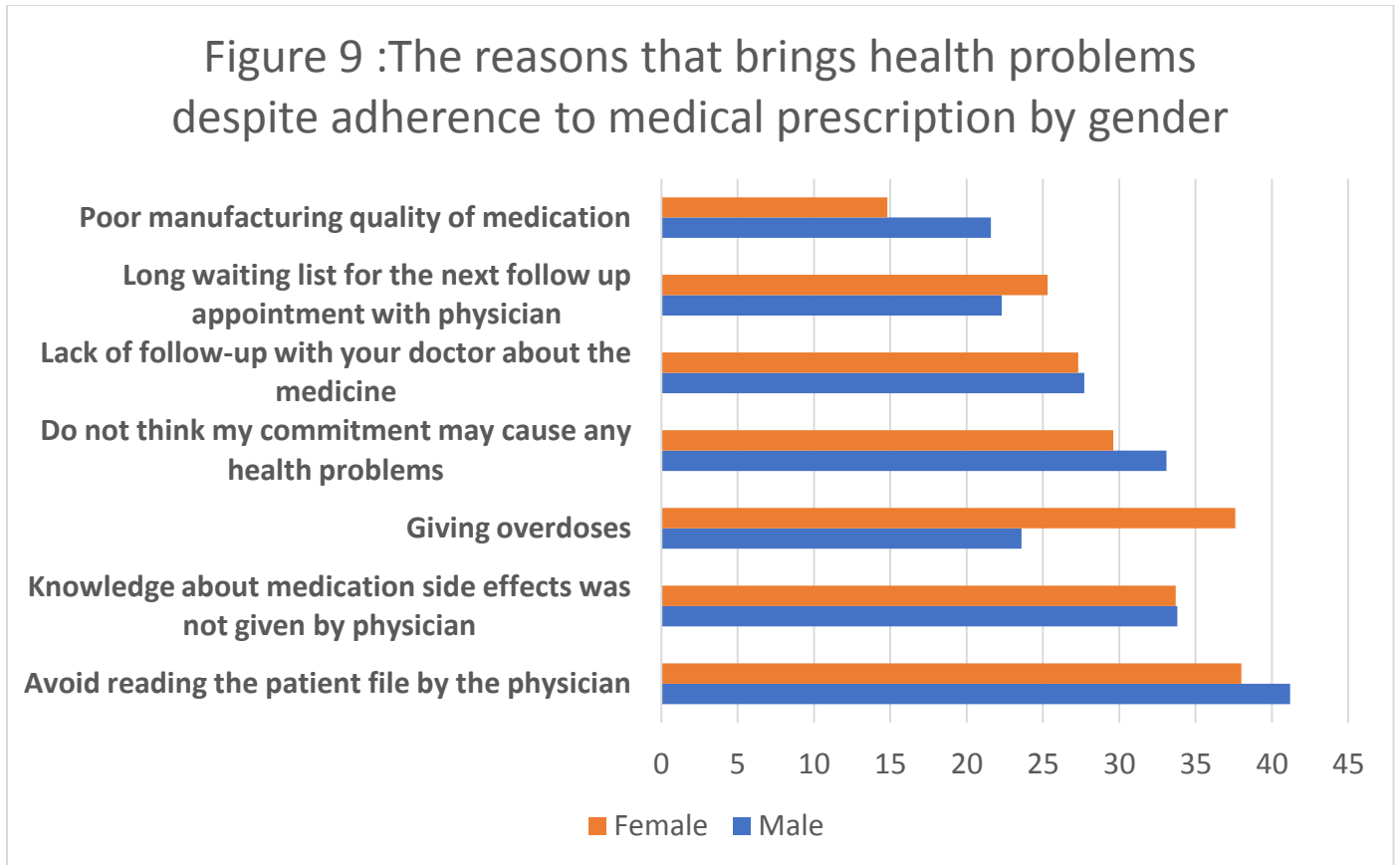
According to compliance by age we found that people more that 30 years old are the age group with more compliance rate compared to other age groups (p<.001)

Also that particular age group had the higher rate of satisfaction compared to other age groups (p<.002)

**Table 2:-** Participants perception toward compliance to medication.

| | Number | Percentage | P value |
|---|---|---|---|
| **1- Do you think that the mishandling of the doctor may be a reason not to trust the physician medical advice and leave taking medication?** | | | <.01* |
| Yes | 302 | 51.4% | |
| No | 55 | 11.2% | |
| To some extent | 219 | 37.3% | |
| **2- Which of the following age groups noticed his lack of medication compliance or rejected?** | | | <.1 |
| Children | 268 | 45.7% | |
| Teens | 258 | 44% | |
| Adults | 221 | 37.6% | |
| Elderly | 235 | 40% | |
| **3- lack of medication compliance may worsen my health status?** | | | <.02* |
| Yes | 245 | 41.7% | |
| No | 62 | 10.6% | |
| To some extent | 280 | 47.7% | |
| **4- I think that my commitment to the drug may bring me and other health problems?** | | | <.3 |
| Yes | 212 | 36.1% | |
| No | 375 | 63.9% | |
| **5- Which of the following health centers commitment to taking the medication out more?** | | | <.09 |
| PHC | 78 | 13.3% | |
| Government | 198 | 33.7% | |
| Special | 115 | 19.6% | |
| Teaching | 36 | 6.1% | |
| Private Clinic | 160 | 27.3% | |
| **6- Which health facility you visit usually?** | | | <.01* Male more in PHC |
| PHC | 148 | 25.2% | |
| Private Clinic | 131 | 22.3% | |
| Government | 147 | 25% | |
| Special | 161 | 27.4% | |
| **7- What types of follow-up used by the health facility that you visit to complete your follow-up?** | | | |
| Telephone | 101 | 17.2% | <.001* |
| Email | 11 | 1.9% | <.1 |
| Doctor visit me | 30 | 5.1% | <.3 |
| Internet & New social media | 52 | 8.9% | <.001* |
| No communication outside health facility | 458 | 78% | <.001* |
| **\*: statistically significant** | | | |

Figure 9 :The reasons that brings health problems despite adherence to medical prescription by gender

According to the reasons that brings health problems despite adherence to medical prescription as figure 9 showed, we emphasized significant value which is giving overdoses (p<.002, more in females) and poor manufacturing quality of medication (p<.03, more in males)

**Table 3:** Other related questions for drug compliance .

| | Number | Percentage | P value |
|---|---|---|---|
| **1- Do you buy drugs from pharmacy without doctor prescription?** | | | <.005* |
| **Yes** | **472** | **80.4%** | |
| **No** | **115** | **19.6%** | |
| **2** -The presence of health centers near the residential neighbourhood may reduce non-compliance to drugs? | | | <.01* |
| **yes** | **99** | **16.9%** | |
| **no** | **345** | **58.8%** | |
| **to some extent** | **143** | **24.4%** | |
| **3-** Lack of a commitment with medication are widespread in the city? | | | <.1 |
| **Yes** | **245** | **41.7%** | |
| **No** | **62** | **10.6%** | |
| **To some extent** | **280** | **47.7%** | |
| **\*: statistically significant** | | | |

## Discussion:-

Effects of Compliance: adherence is a very important issue in medical field for many causes so as we know that non-compliance to treatment imposes a considerable financial burden upon health care systems.

### Doctor – patient Relationship:-

A paternalistic approach to be avoided because the doctor patient relationship, And communication and shared decision-making are important factors affecting compliance as shown in our survey that %51.4(n=302) will not committed to medication if they face misbehavior from their physicians that will affect the relationship between them also Knowing each patient's health beliefs and physician plan are the key feature of the new doctor patient encounter.

### Doctor-patient decision Making:-

We have to discuss the treatment plan where both patient and doctor can adhere, as we know a lot of people in KSA use new social media in communication recently so as we found according to survey that the best option to resolve a medical non- compliance regarding participant opinions showed Good following up between doctor and patient by mean of modern social media 67.6% (n= 397) followed by Explain the benefits and the side effects of medications to patients 60.1% (n= 353), Good behavior between doctor and patient and give the patient chance to talk 59.1% (n= 347) and other causes as mentioned in results, so as we can see the great role of patient in making decision about their treatment the thing that will decrease patient non-compliance , we need to review our style of communication and provide special office only for patient relationship and communication outside health facility because as we see in the result that more than 70% of health facilities lack these services .

### Satisfaction:-

We need to study "seeing the same physician" as in case of family physician and its influence on patient satisfaction, that reflect the need of family physician in our health system as shown in our study that one of the most important thing to overcome noncompliance is Provide more family physicians 42.1% where the patients can follow again and again the same physician to complete their health issues and get maximum benefits.

### Role of neighbor PHC:-

According to survey showed that %58.8 said that availability of neighbor primary health center have no effectiveness in decrease non- compliance , and we conduct study to show which health care facility have more rate of compliance and the result showed that %33.7 which mean more than 1/3 of participants are more compliant toward governmental hospital followed by private clinic(%27.3 ) , private hospital (%19.6), PHC(%13.3) , teaching hospital , as we can see governmental hospital goes with highest rate of compliance but we recommended other study to be conducted to see what factors affect compliance in these health facilities.

### History of PHC:-

There was study that have explanation on why PHC it occupies middle place in patient adherence, By the year 1987 the Ministry of Health in Saudi Arabia had established 1477 Primary Health Care centers all over the kingdom, Saudi study done 3, June 1993 **[9]** was to assess the satisfaction of patients with different aspects of Primary Health Care services in Riyadh, the results showed that the patients are generally moderately satisfied with the services. They are most satisfied with the effectiveness and humaneness aspects of care.

### Compliance of general population:-

Regarding compliance to medication of general population , many research done in KSA but did not mentioned the compliance of general population and most of their research confined to certain group of patient with certain disease , so in our study we have conducted a study to involve the public and we found that most of responses 32.2% said they stop taking medication if they felt better , while 31.7% said they always committed to the drugs that prescribed by the doctor, 23.7% said Sometimes , 12.4% will never committed to the drugs that prescribed by the doctor, so here we can see that more than 1/3 of participants stop taking medication if they feel better that indicate poor knowledge about side effect of some drugs like antibiotics and the risk of development of bacterial resistance as result of that ,as we consider our participants highly educated despite we found higher rate of non-compliance to treatment the thing that imposes serious attention. According to our study %65.5 stop taking medication in flu and cold (that sometimes may need antibiotic prescribed by GP).

**Relationship between education level and compliance:-**
As we mentioned before that higher educational levels of participants were found to be %32.2 stop when they feel better , Several studies have found association between higher education level and compliance,[10] while some studies have found no such association, A study conducted in the UK has shown that patients with a lower level of education have better compliance.[11,12] It may be presumed that patients with a lower educational level may have more trust in the physician's advice. However, these results show that education may not be a good predictor of therapeutic
compliance.

**Causes of non-compliance among general population of eastern province:-**
Our study and other studies shown many causes of non-compliance, in our study we found many causes e.g., the large number of drugs that must be taken, Inappropriateness of medication, lack of knowledge about the function of drugs, Side effects, lack of trust in doctor prescription, high cost of medications and other studies conducted in KSA shown other causes [13], Those patients who did not get adequate information on what to do in the event of their missing a dose, or if they experienced any side effects of the medicine, were more non-compliant.

**Numerous researches involving:-**
Various diseases have evaluated the effect of the patient– physician relationship on patients' compliance, and has found it to be another strong factor in favor of patient compliance. [14-16], Compliance to treatment advice was good when the physicians were supportive, supplied vital information, and listened patiently to patients [17].

Suggested solutions to overcome non-compliance among general population of eastern province:
The best option to overcome medical non- compliance regarding  participants opinions showed to be  following up between doctor and patient by modern social media 67.6% (n= 397), Explain the benefits and the side effects of medications 60.1% (n= 353), Good behavior between doctor and patient and give the patient chance to talk 59.1% (n= 347), Provide more family physicians 42.1% (n= 247), Reduce the doses of patients who have a lot of diseases 39.5% (n= 232), Reduce the prices 31.7% (n= 186), provide more Health Centers 29% (n= 170).

## Conclusion:-
The findings show that males and people at age of 30 more compliance to drugs  and more satisfied , side effect and accumulated drugs are the common cause of non-compliance, best option to overcome non-compliance found to be follow up by social media and explain side effects of drugs , people less satisfied with governmental hospital and more compliance to PHC   so there are a definite need for Hight qualified health system, patient -centered relationship, health education and to improve patient-doctor communication and health services.

## Acknowledgments:-

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