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Assessment of medication non-adherence among Saudi old adults patients at security forces hospital program in Riyadh, KSA

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Abstract

Objective: The purpose of this study is to explore the medication adherence or non-compliance among old adult patients ≥ 50 years old.

Methods: A cross-sectional, observational study was conducted, with a representative sample of 150- individuals, female and male. The data was collected using a questionnaire by personal interviews. It was, then, tabulated and interpreted.

Results: Our old adults patients tend to be adherent to their medications and have defects in counseling, especially by pharmacist. They have poor practice in terms of using and buying their medications, however not to a major extent.

Conclusion: Old adult population need to be adherent to their medications in order to get the maximum benefits from these medications. The role as pharmacists who work with them must be magnified and a specialty as "elderly clinical pharmacist" must be taken in consideration. Apps in Arabic language can be a good option for them.

Keywords: Old adults, Adherence, Medication, Non-Compliance, Elderly

1. Introductions

Non-adherence or poor medication adherence (PMA) with medications is a complex and multidimensional health care problem ^[1] is associated with higher risks of morbidity, hospitalization and mortality ^[2]. Adherence is defined as the extent to which patients are able to follow the recommendations for prescribed treatments. Patients may be non-adherent during different stages of their treatment. They may decide not to fill their prescriptions in the pharmacy and not start their treatment at all. Patients also may use more or less than the prescribed treatment or use their medication at the wrong time Patient may forget some of his medication if he or she takes a lot of medication or may stop taking it, if there some adverse effect or medication have high price. The causes of non-adherence may be related to the patient, treatment, and/or health care provider ^[1].

Medication taking behavior is extremely complex and individual, requiring numerous multi factorial strategies to improve adherence. An enormous amount of research has resulted in the development of medications with proven efficacy and positive benefit-to-risk profiles. This millennium has seen a new and greater focus on outcomes. However, we seem to have forgotten that between the former and the latter lies medication adherence ^[3].

The extent to which patients adhere to their medication regimens is a critical issue for pharmacists practicing in managed care' because medication adherence is a central element of many clinical programs within health plans. For example, some retrospective drug-utilization review (DUR) programs identify and intervene with patients who are considered to be noncompliant with their medication regimen ^[4].

Patients' non-adherence may be a common underlying cause of treatment failure. The premise is simple. No matter how advanced a drug is. If the patient does not take it properly, the patient and the physician cannot expect to receive the full benefits of the medication. Poor adherence often hinders treatment, especially in patients with chronic disease such as hyper-tension or diabetes. The prevalence of chronic disease is rising with the aging population, and the most common chronic condition in adults is multi-morbidity. As the number of prescribed medications increases the risk of non-adherence also increases. These trends highlight the importance of patient adherence ^[5].

2. Aim

To find and document local data related to medication taking behavior among Saudi old adult patients.

3. Objective

The purpose of this study is to explore the medication adherence situation among old adult patients ≥ 50 years old.

4. Significance

By defining the situation and factors behind medication non-adherence among old adult patients, we can enhance the adherence in such population, to improve their quality of life, increases confidence between patients and health care givers, and decrees health care cost.

5. Hypotheses

H0 medication adherence is perfect among Saudi old adult patients.

H1 medication non-adherence is existing problem among our old adults, need to be investigated and solved.

6. Methodology

6.1.1 Setting

Security Forces Hospital Program (SFHP) located In Riyadh, Saudi Arabia, is a tertiary medical care center with 600 beds, between 1200 to 1800 old adult patients (≥ 50 years old) are admitted in this hospital yearly.

6.1.2 IRB status

The study was approved by the institutional review board.

6.1.3 Study Population

This cross-sectional, observational study was conducted by generating a questionnaire to determine the situation of medication adherence for each subject. The questionnaire was formulated to obtain the most complete and accurate information possible, also to ensure that respondents fully understand the questions and are not likely to refuse to answer, lie, or try to conceal their attitudes. The questionnaire is organized and worded to encourage respondents to provide accurate, unbiased and complete information. It composed of 19 questions (attached in the appendix A).

Since our sample is old patients we choose our method to be personal interviews, our representative sample was 150 individuals aged 50 or older female and male patients who were selected and interviewed between the period of January to February 2016 at Security Forces Hospital Program in Riyadh, females were 90 patients and males were 60 patients.

We excluded patients aged less than 50 years old, unconscious patients, Patients with Delirium, Patients not ready to respond to the query, non-Saudi citizen, deaf and dumb people, also caregivers are excluded.

While the inclusion criteria were patients aged ≥ 50 years old, healthy and cooperative, both genders, taking three medications or more, and those who are willing to give consent.

The study followed the ethical principles consistent with good clinical practices according to SFDA regulations for non-interventional studies.

The main objective of this study was to explore the reasons behind medication non-adherence, if any, among old patients, and to suggest solutions to improve their medication adherence.

6.1.4 Statistical Analysis

Statistical analysis was performed by using SPSS® version-21 (SPSS Inc., Chicago, IL, US). The demographic characteristics were summarized through descriptive statistics. Continuous and categorical data were presented as mean \pm standard deviation (SD) and number (%), respectively. For continuous variables, one-way between-groups ANOVAs were used to assess group differences. Comparisons of categorical variables were performed by the Chi-square test.

7. Results

Almost all the study population who got interviewed was meeting the inclusion criteria from security forces hospital program, Riyadh, Saudi Arabia. All questionnaires were filled properly, except 2 questionnaires, which were not completed. Mean age of the study population was 64.9797 years with standard deviation (SD) of ± 6.61936 (Table 2). Male accounted for 40%, while female accounted 60%. Sixty-eight of them were educated (45.9%) while the other 80 (54.1%) were non-educated (Table 1).

Table 1: Demographic data.

Gender	Frequency (%)
Male	60 (40 %)
Female	90 (60 %)
Age	
50-65year	104 (70.3%)
66-75 year	29 (19.6%)
76 -85 year	15 (10.1%)
Education	
Educated	68 (45.9%)
Non educated	80 (54.1%)

Table 2: Descriptive Statistics.

	N	Minimum	Maximum	Mean	Std. Deviation
Age Valid N (list wise)	148	50.00	85.00	64.9797	6.61936

Among our sample, the number of old patients who were considered totally compliant as per responding to our questionnaire questions reached 106 (71.62%) and the moderately compliant were 42 (28.378%), (Table 3).

Table 3: Percentage of compliance according to age groups.

Age Groups	Group		Total
	Complete compliance	Moderate compliance	
50 - 65 y Count % Within Group	71	33	104
	67.0%	78.6%	70.3%
66 - 75 y Count % Within Group	24	5	29
	22.6%	11.9%	19.6%
76 - 85 y Count % Within Group	11	4	15
	10.4%	9.5%	10.1%
Count Total % Within Group	106 (71.62%)	42 (28.378%)	148
	100.0%	100.0%	100.0%

The source of medication related knowledge among our population was mostly from visiting their doctors (77.7%), pharmacists (8.1%), their own readings (2.7%), friends and associates (10.8), online doctors (0.7%), respectively (Fig. 1).

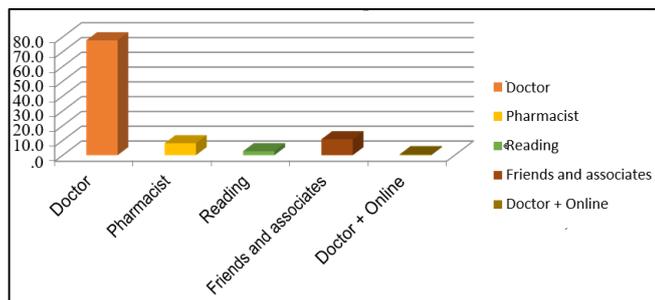


Fig 1: The source of medication-related knowledge among sample population

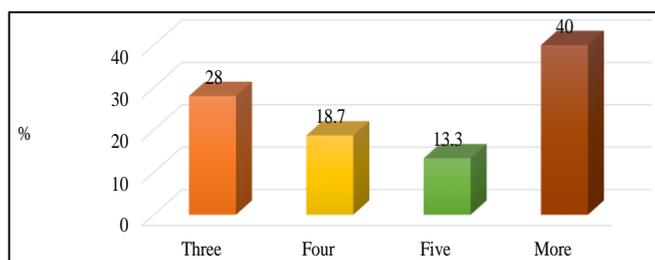


Fig 2: Number of medications taken by sample population daily

Most of old patients believe the medication is useful and that's why they consume it (86%), while 10% of them believes it is useless but still, they consume it. On the other hand, 3.3% of them believe it is useful, but they avoid it. However only 0.7% of the old patients they believe it's useless and they avoid taking it (Fig. 3).

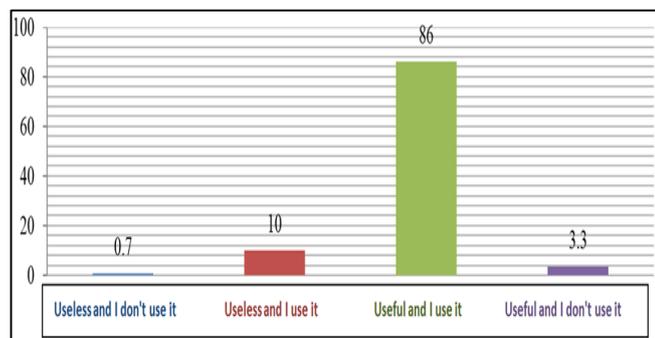


Fig 3: Old Patients' believes and action towards medications

Eighty three percent of the sample population adheres to their medication time, while only 16.7% of the old patients were not adherent to the time while taking their medications, as seen in (Fig. 4).



Fig 4: Patients adherence from the time perspective

Forty three percent of the patients stop taking their medications if they feel any annoying side effects, while 56.7% continue (Fig. 5).

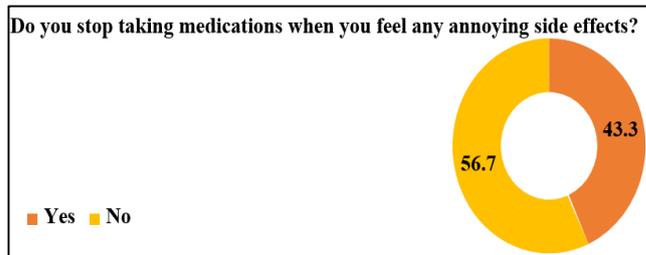


Fig 5: Patients adherence from side effect perspective

Most of the patients they continue taking their medication even if their health improved (77.3%), while the rest (22.7%) they stop as long as they feel better (Fig. 6)

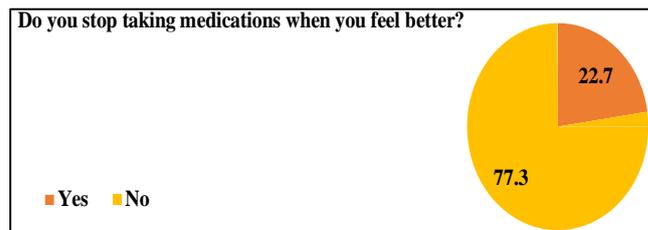


Fig 6: Patients behavior towards medications after they feel better

Patients adhere to their medications more if their health care provider gave them the proper counseling (89.3%) and the opposite with the rest of the patients (10.7%), (Fig. 7).

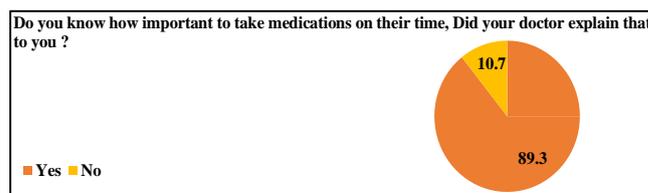


Fig 7: The relationship between medications adherence and health care provider counseling

Old population tends to refill their prescription on time (94.7%), and only 5.3% of them don't (Fig. 8).

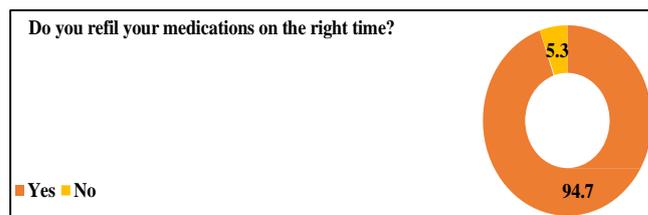


Fig 8: The relationship between medication adherence and refilling medications on the right time

Sixty nine percent of the old patients care about checking always the expiry dates of their medications before consuming them. However, 18% of them don't, while 8.7% of them do it as often, and the remaining 4% they sometimes check it (Fig. 9).

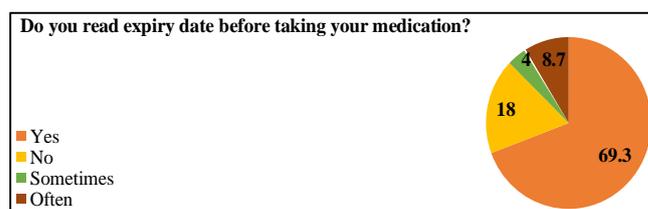


Fig 9: Relationship between expiry date and adherence

Considerable percentage of our sample (54.7%) takes their medication by prescription only, while 24% they get their medication without prescription, and 20% take their medication sometimes with prescription and sometimes not. However, only 1.3% they often get their medication with prescription (Fig. 10).

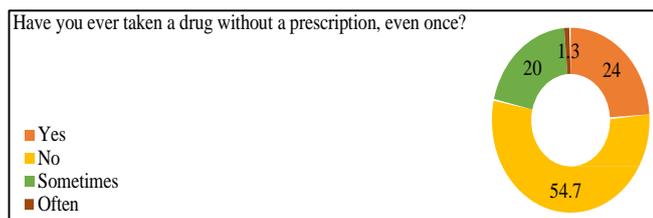


Fig 10: Showing that if the population sample taken a medication without a prescription

Majority (56.7%) of the old patients refrained to advise others to use medications depending on their experience, while 27.3% they do advise others to use medications based on their experience. However, 14% of them they commit such behavior as "sometimes", and 2% as "often" (Fig. 11).

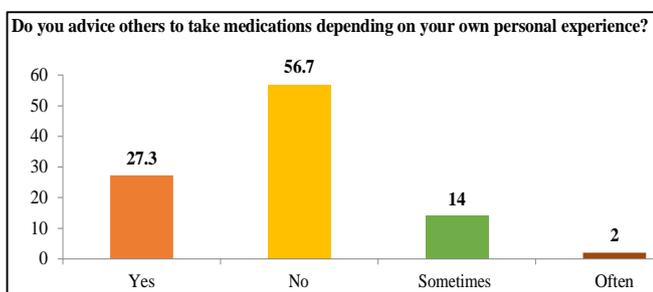


Fig 11: Elderly's' advise others to use their medications based on personal experience

Patients are aware about the hazard of medication overdose ingestion (71%), while 23.5% of them thinks it's not harmful, and the remaining 5.4% of them think it could be harmful sometimes (Fig. 12).

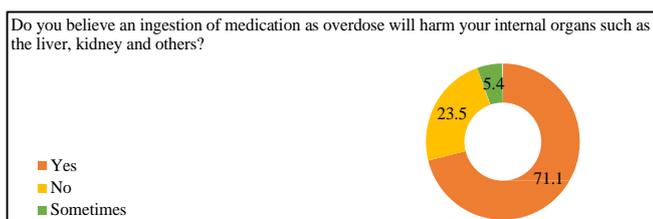


Fig 12: Old Patients' believes regarding medication overdose

The majority (62.7%) of the sample populations read the medication leaflet of their medications, while 19.3% of them don't. However, 17.3% of them would sometimes read it and 0.7% would often read it (Fig. 13).

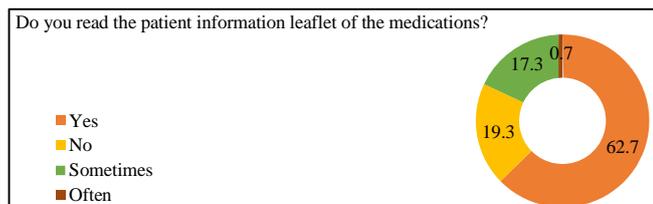


Fig 13: The relationship between medications adherence and patient information leaflet

Explains the reasons of non-adherence from patients' perspectives (Fig. 14).

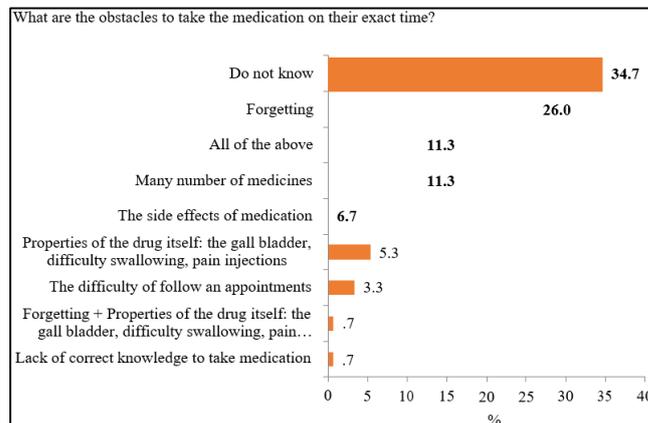


Fig 14: The barriers hinder medications' adherence

Most of the sample population' income was below 5000 SR (55.3%), around 31% of the patient's income was between 5000 -10000 SR, and 14% more than 10000 SR (Fig. 15).

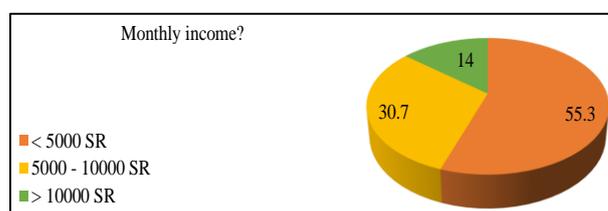


Fig 15: Monthly income of the population

Most of the sample population believes that the Apps could have a beneficial impact on medication adherence as a reminder (83.3%), while 15.3% think the opposite (Fig. 16).

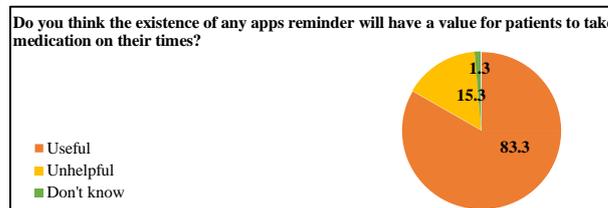


Fig 16: The relationship between "Apps" reminder and medications adherence

8. Discussion

Reasons for non-adherence can be broadly classified into patient related factors, medication related factors, and health care provider related factors [6]. Also, Health care system factors and socioeconomic factors as per recommendation from miller *et al* and the world health organization [7]. Medications are frequently used in the elderly to improve quality of life, extend life expectancy, and cure/mitigate disease. It is clear, however, that the elderly often fails to adhere to prescribed medications, leading to unwelcomed clinical and economic consequences [8].

Although one might expect that older adults would have lower levels of medication adherence than younger adults, some studies have shown that older adults may have higher levels of adherence, perhaps because they are not as busy with other activities as are younger persons, or because they are more aware of the potential impact that medications may have on their health. However, in a study by Carney *et al*, depression was significantly associated with worse medication adherence in elders [9].

In our study, Female gender (60%) was more prominent among our sample in comparison to male gender (40%), this could be due to the easy accessibility to the female waiting areas and easy to ask then because the researchers are also females, as the culture and religion background enhance interactive sessions between females than males (Table 1).

The Mean age of the study population was 65 years, however, between the age groups, we noticed the number of old patients were more among those whose age range from 50-65 years (104 patients = 70.3%), since they are able to mobile independently in comparison to other age groups (Table 3).

Fig. 1, shows that patients get their main medication related knowledge from doctors (77.7%), this could be either they trust their doctors more or they don't find enough time to interact to other healthcare professionals such as the pharmacists (8.0%). Thus, the role of the pharmacists must be magnified to such population.

Old patients mostly are taking more than 3 medications per day (Fig. 2), thus they tend to get annoyed or even to forget taking their medications. Counseling should emphasize on the importance of medication adherence in periodic time manner.

Such population trusts the effect of the medications (Fig. 3), however, the other part of the population who believes the opposite should be counseled to emphasize on medication benefits for their health.

Time of taking medications was not an obstacle for our patients (Fig. 4), while 43% will tend to discontinue taking their medication if they felt any annoying side effects. But 57% will continue taking it if they were notified in advance about such side effect (Fig. 5).

Since such population feels comfortable after becoming better, they continue taking the whole course of their medications (77.3%) and only few tends to discontinue (Figure-6). However, this depends mostly on the proper counseling (Fig. 7).

As an indication of adherent patients (Fig. 8), the tendency to refill their medication prescriptions is high (95%). Also, they tend to check their medication expiry date regularly (Fig. 9). The trend towards getting medications with prescription is high (55%), while the rest of the population needs to be educated towards this mall practice (Fig. 10). Majority of the old patients refrain from advising others to take medications depending on their own experience (57%), while part of them practice this regularly (27%) and others as "sometimes" (14%), (Fig. 11). However, 71% of the patients believe that overdosing themselves with medications is harmful; this is a good indication of their medication safety knowledge (Fig. 12). The patient information leaflet has a role in improving the patient's adherence to their medications (63%), on the other hand, some get scared from the detailed information in the side effect sections and get refrained from reading it (19%), (Fig. 13).

Around 35% of the sample population could not define the reason behind their non-adherence. However, 26% of them forget to take their medications, 11.3% are non-adherent either because they forgot to take their medications, or they could not specify the reason. Eleven percent complained of having poly pharmacy, and 6.7% suffers from medication side effects due to which they are non-adherent. While 5.3% attributed their non-adherence due to medication difficulties in swallowing, or pain of injection sites, etc., on the other hand, inability to get physician appointment was behind 3.3% of the non-adherence of the population. Lack of medication knowledge was one reason also for non-adherence (0.7%), (Fig. 14). From (Fig. 15), we could not find a relation between patients' income and medication adherence since all patients get most of their medications from governmental hospital unless for some out of stock items, and this is not so frequent.

Fig. 16, shows that the old patients believe Apps applications could help them in getting more adherent to their medications, such an idea should be taken in consideration especially Apps in Arabic language.

9. Conclusion

Old adult population who has multiple medical problems led to take several medications per day, need to be adherent to their medications in order to get the maximum benefits from these medications. Their tendency to be adherent is a form of being tied to the life in order to survive in good health and better quality of life.

Being old adults, our role as pharmacists must be extensive with them to emphasize more on medication use from all aspects, as they need more education and counseling regarding their medications. Apps in Arabic language can be a good option for them. Having pharmacist specialized in old adults 'medications (elderly

pharmacists) is an outstanding idea need to be materialized.

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