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**Research Article**

### COMPLIANCE AMONG PARKINSONISM IN AL-MADINAH REGION

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**Abstract:**

**Introduction and objective:** One of the most important components of the health promotion is medication adherence and as long as the doctor prescribe the correct drugs with the correct does it will remain insufficient without medication adherence by the patient. This study main goal is to assess medication adherence in order to improve quality of life among patients who suffer from parkinsonism.

**Methods:** a total of 43 patients are diagnosed with Parkinson's disease, who met the inclusion criteria were included in this study. We assessed their adherence to medication in in-patient neurology departments or in the out-patient clinics in Madinah -Kingdom Of Saudi Arabia. From November 2017 to June 2018 medication adherence was assessed in those particular group of patients through an interview with each patient or his/her care giver by using multiple choice graded questionnaire.

**Results:** From a number of 43 patients, 76.8% ( $N = 33$ ) of them were non-adherent to Parkinson's Disease Medications. No significant differences were found between males and females regarding there Adherence toward Parkinson's Disease Medications. A difference in adherence was noted among patients who were suffering from other comorbidities compared to patients with no other comorbidities. Forgetfulness is the most contributing factor that affect patient Adherence toward Medications. patients with higher score in beliefs about medicines questionnaire were more adherent to their management plan than patients who got lower scores and were more responsive to treatment plan.

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## INTRODUCTION:

Parkinsonism is a wide term that describes a clinical manifestations and symptoms of bradykinesia, rigidity and coarse tremor. It is a common neurodegenerative disorder with Idiopathic Parkinson's disease being the most widely recognized type.<sup>(1)</sup> In 1817, a physician from London called James Parkinson was the first to describe Parkinson's disease. In term of neurodegenerative disease in relation to age Parkinsonism is the second most common after Alzheimer's disease. It is estimated that 7 to 10 million individuals globally have Parkinsonism<sup>(2)</sup>. Parkinson's disease prevalence in Saudi Arabia is reported to be about 27 per 100,000<sup>(3)</sup>.

The definition of medication adherence AKA medication compliance is defined as the degree to which the patient's attitude corresponds with the planned medications from a health care provider from commencement time to cessation of treatment<sup>(4)</sup>. Examples of non-adherence include: inability to have the medication administered or restored, errors of dose, oversight of doses, incorrect route administration, mistakes in the time of administration, recurrence of administration, and untimely cessation of the medication regimen, non-adherence of lifestyle modification including the patient neglects to pursue the diet and exercise recommended by his physician and non-adherence of appointment at which the patient neglects to appear to the clinic for subsequent follow ups<sup>(5)</sup>.

There are no studies found focusing on the parkinsonian patient's compliance and how well they are coping with their illnesses in Saudi Arabia. It is crucial to know whether medications adherence will affect the improvement and well-being of such chronic patients. Knowing the contributing factors for their incompliance could help improve it significantly. Medication adherence should be discussed in every appointment, especially if there is no improvement in the patient condition.

In 2003, the WHO has reported that "expanding the viability of commitment interference may have a far more prominent effect on the validity of the population than any change in particular treatment"<sup>(6)</sup>. Treatment compliance is a vital component of the management plan for parkinsonian patients. The choice and dose of the medications will be affected as well as the clinical judgement unless the patients are adherent to their medications. Thus, we are aiming in this study to determine the factors affecting patient compliance among parkinsonian patients and the effect of patient's compliance on the disease management.

## 2. MATERIALS AND METHODS:

### 2.1. Patient's features:

From November 2017 to June 2018, a sum of 43 patients who were determined to have parkinsonism were incorporated into our research. Our patients were chosen from neurological departments from all around al-Madinah region. This study approval was conceded by the research ethics committee in Taibah university – Madinah. Informed consent was taking from each patient who decided to participate in the study, keeping in mind that each participant was informed that his/her individual's data will never be imparted at any condition to a third party.

#### Inclusion criteria:

- a) all residents in Saudi Arabia (al-Madinah region).
- b) aged at least 40 years of old.
- c) all diagnosed with parkinsonism disorder with good response to levodopa.
- d) consented to be part of this study.

#### Exclusion criteria:

- a) Patients with dementia.
- b) Patients with secondary parkinsonism.
- c) Patients with other neurological disorders.

### 2.2. The Morisky Medication Adherence Scale, (MMAS):

The Morisky Medication Adherence Scale (MMAS) developed on basis of four parts with an outcome plan of "No" means 1 and "yes" means 0. The components are gathered to afford a scope of points from 0 to 4. These inquiries incorporated into this Morisky Medication Adherence Scale are: (1) Have you ever neglect to take your medications? (2) Do you ever have an issue making sure to take your medications? (3) when you feel good, do you in some cases quit taking your medications? When you felt better did you in some cases quit taking your medications? (4) when you feel more regrettable, did you quit taking your drug? In our study, we consider participants as a poor disciple on the off chance that they scored at least 1.

### 2.3. Beliefs about medicines questionnaire:

This questionnaire was created in UK and comprises of two sections (general and particular areas). Patients are asked whether they agree or disagree with an announcement on a five-points scale, in which 5: strongly agree, 4: agree, 3: uncertain, 2: disagree, 1: strongly disagree, with the end goal to check the patient's assessment on every announcement. This survey is separated into two sections, estimating members convictions about medicines as a rule and their convictions about a particular medication. In our questionnaire, the specific sections elements were about Parkinson's disease medications. Total scores for the need of the medicines and concerns scales extended from 5

to 25. Higher score shows more grounded convictions<sup>(7)</sup>.

A need of medicines and concerns differentiation is ascertained as the distinction between the need and the concern scales, with a conceivable scope from -20 to +20. A positive differential score demonstrates more grounded need than concerns while negative score shows the contrary.

The general segment comprises of the overuse subscale (for instant “doctors use large number of medications”) and the Harm-Benefits subscale (for example “medications accomplish more harm than good”). The total score for each item for the Harm-Benefits subscale is ranged from 4 to 20 meanwhile it extended between 3 and 15 for the overuse subscale. The sum score for each subscale is divided by the quantity of elements in the scale. Higher score shows more grounded convictions while lower score demonstrates poor convictions. Only completed questionnaires were incorporated into the study.

#### 2.4. Assessment of Medication Adherence:

The data of the participant of the study was taking from the patient in out-patient clinics and the words of neurology department after signing a consent. The data were gathered by interviewing the patients or their care givers through a questioner of knowing reliability and validity to survey medications adherence. Credence about disease (IPQ) which stand for illness perception questionnaire and thoughts about medication (BMQ) which stand for beliefs about medication questionnaire were also assessed.

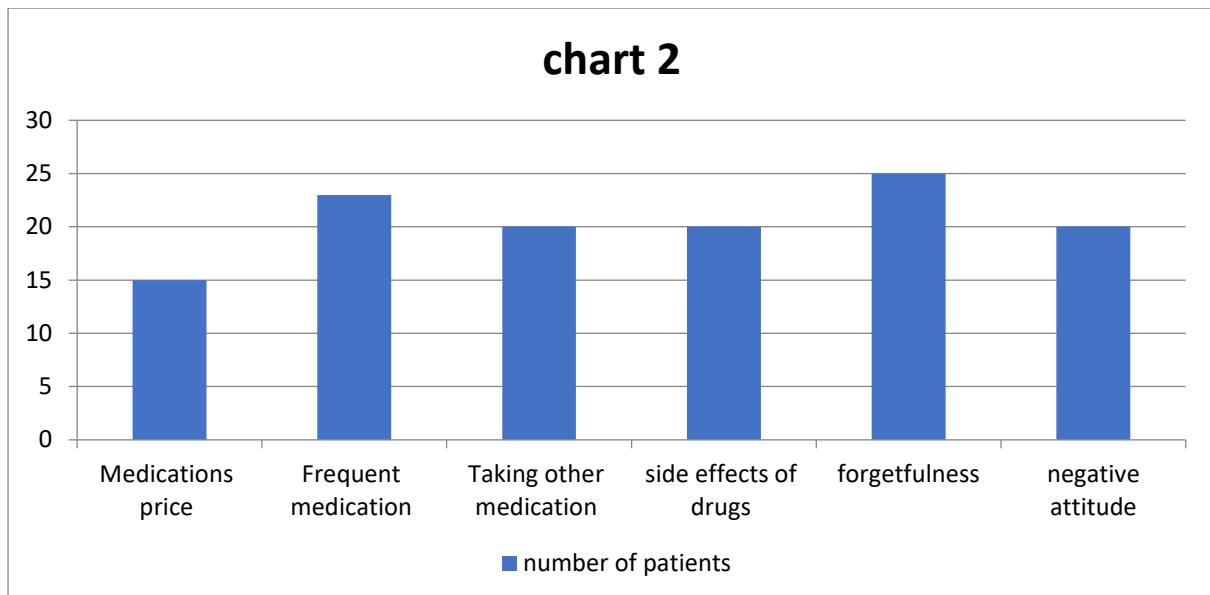
#### **RESULTS:**

From a number of 43 patients who met the inclusion criteria within the study time frame in al-Madinah region, 76.8% (N = 33) of them were non-adherent to Parkinson's Disease Medications. No significant differences were found between males and females regarding there Adherence toward Parkinson's Disease Medications except for Associated Diseases Table (1):

Table (1): Demographic Data

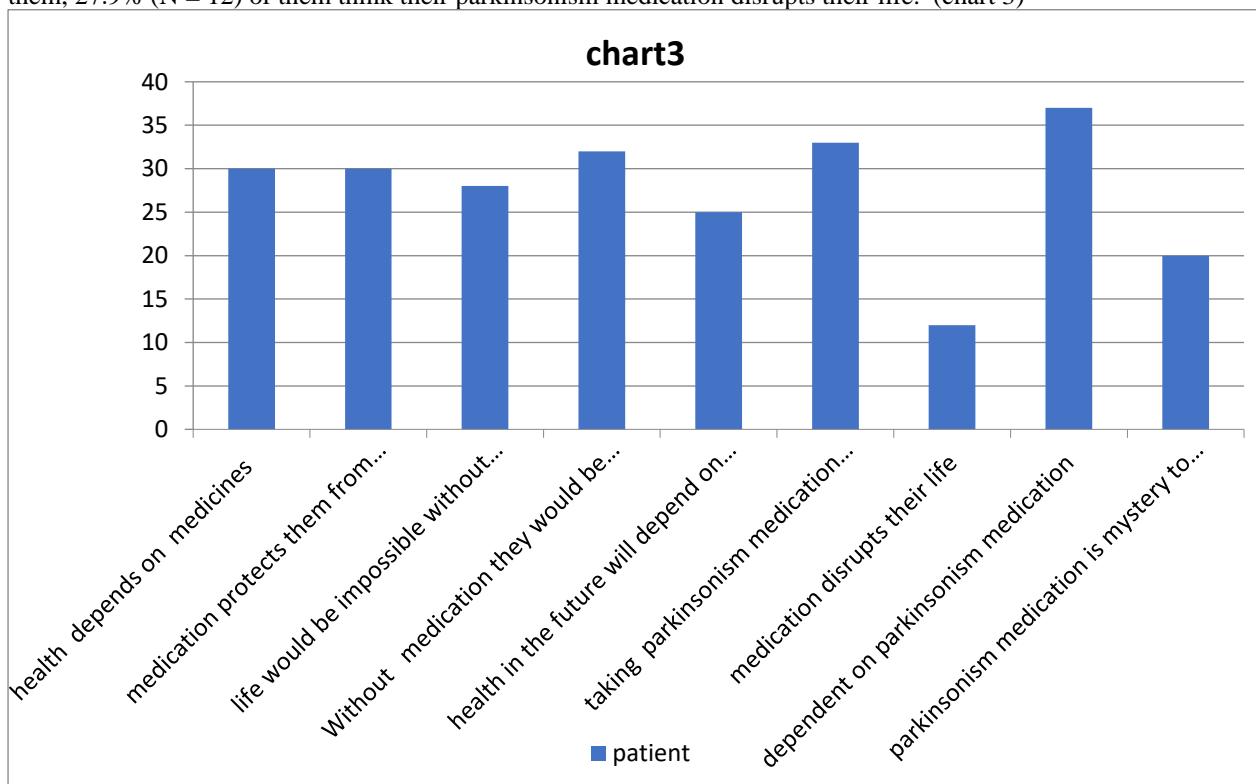
	<b>non-adherent patients</b>		<b>adherent patients</b>	
	<b>Males (21)</b>	<b>Females (11)</b>	<b>Males (8)</b>	<b>Females (2)</b>
Age Y:	80.14±4.82	81.92±4.80	75.14±4.81	77.92±4.83
Education level:				
Illiterate	2 (9.5%)	3 (27.2%)	1 (12.5%)	0 (0%)
Primary School	5 (23.8%)	3 (27.2%)	2 (25%)	1 (50%)
Preparatory	3 (14.2%)	1 (9.09%)	1 (12.5%)	1 (50%)
Secondary	8 (38.0%)	2 (18.1%)	4 (50%)	0 (0%)
University	3 (14.2%)	2 (18.1%)	0 (0%)	0 (0%)
Residency:				
Al-Madinah	10 (47.6%)	8 (72.7%)	3(37.5%)	2 (50%)
Other Areas	11 (52.3%)	3 (27.2%)	5 (62.5%)	0 (0%)
Associated Diseases:				
No	7 (33.3%)	3 (27.2%)	6 (75%)	1 (50%)
DM	6 (28.5%)	2 (18.1%)	1 (12.5%)	0 (0%)
HTN	3 (14.2%)	4 (36.3%)	0 (0%)	1 (50%)
DM & HTN	5 (23.8%)	2 (18.1%)	1 (12.5%)	0 (0%)

Adherence toward Parkinson's Disease Medications were significantly affected by many factors like forgetfulness. It was the most recognized contributing factor for non-adherent in this group of patients 75% (N=25). Frequent medication (taking more than one pill a day) 71% (N = 23), side effects of drugs 66.6% (N = 20), Taking other medication (Non-Parkinson's disease drugs) 66.6% (N = 20) and medications price 45.5% (N = 15). (chart 2)



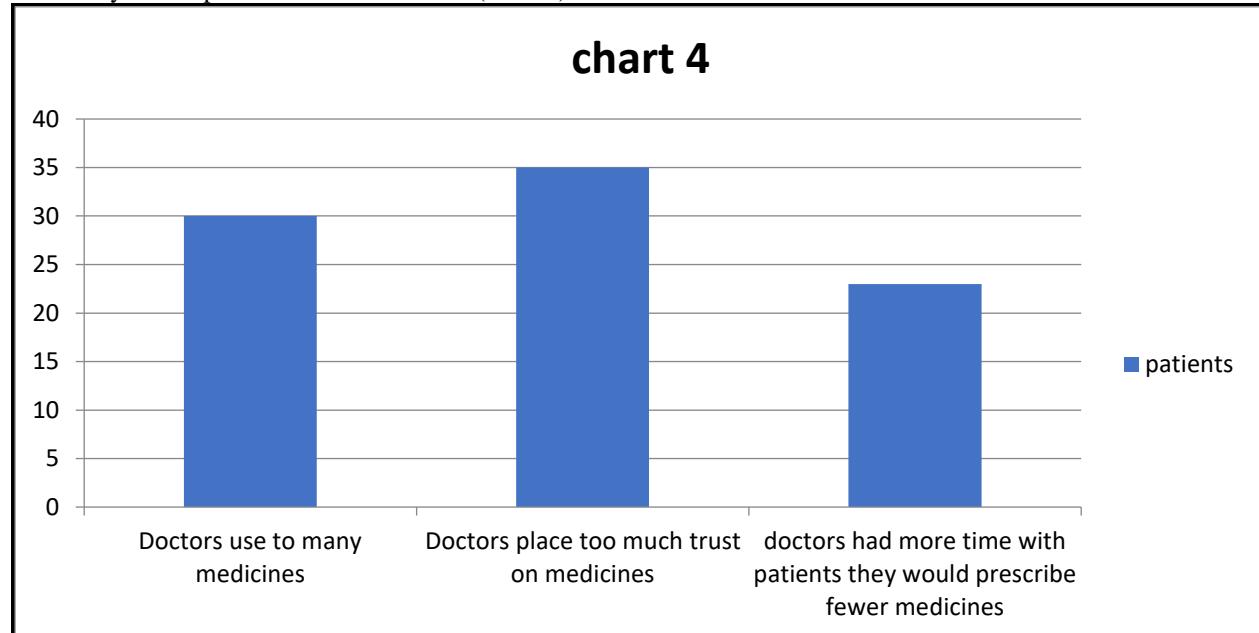
Beliefs about medicines questionnaire (BMQ):

A total of 43 participants completed the BMQ. 85% (N = 37) of them sometimes being worried about relying on parkinsonism medication, 79% (N = 34) of them in some means worry about the long term impacts of parkinsonism medication, 76.8% (N = 33) of them think taking parkinsonism medication worries them, 74.4 % (N = 32) of them think that without parkinsonism medication they would be very ill, 69.7 % (N = 30) of them think their health at present depends on parkinsonism medications, 69.7 % (N = 30) of them think their parkinsonism medication protects them from becoming worse, 65.11 % (N = 28) of them think their life would be impossible without parkinsonism medication, 58.1 % (N = 25) of them think their wellbeing in the future will rely upon parkinsonism medication, 46.5% (N = 20) of them think their parkinsonism medication is a mystery to them, 27.9% (N = 12) of them think their parkinsonism medication disrupts their life. (chart 3)

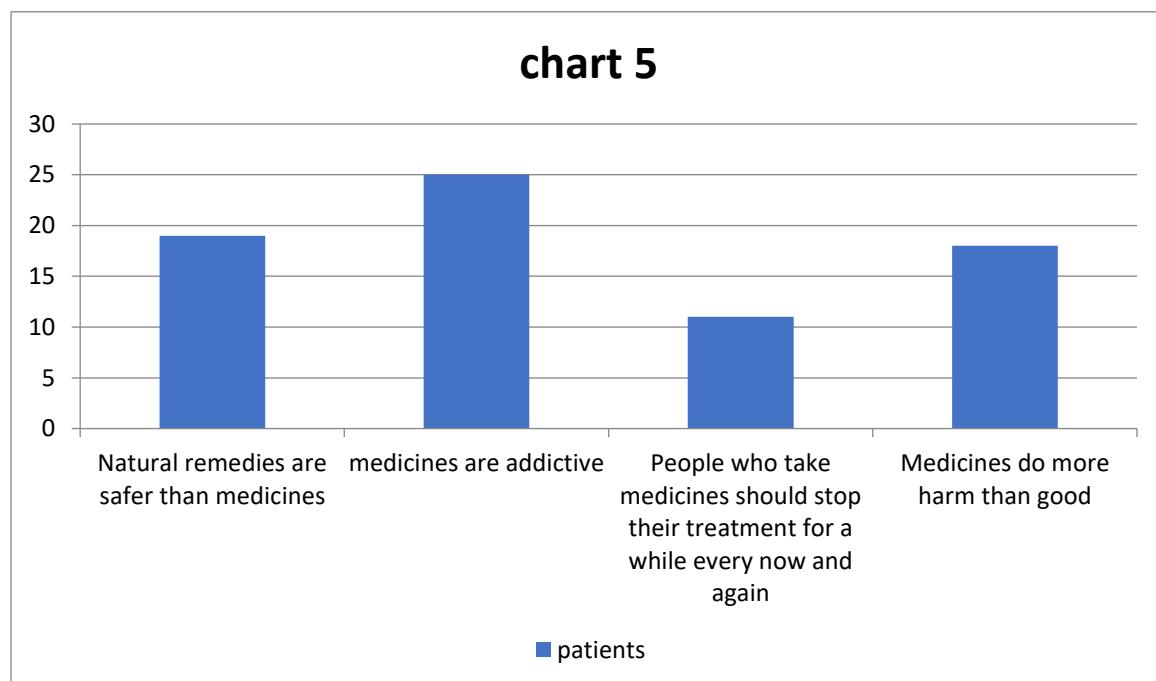


General-Overuse scale:

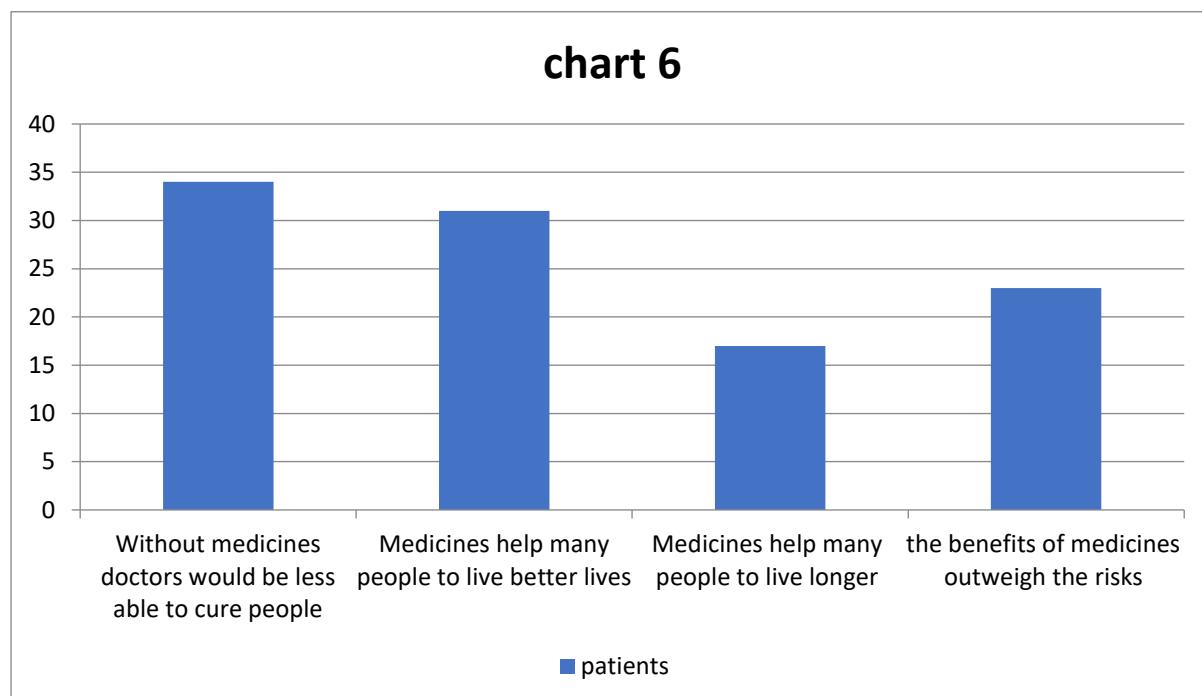
82.4% (N = 35) of them think their Doctors place too much trust on medicines. 69.4% (N = 30) of them think their Doctors use to many medicines. 53.7% (N = 23) of them think If their doctors spent much more time with them they would prescribe less medicines. (chart 4)

The General-Harm scale:

59.2% (N = 25) of them think Most medicines are addictive. 43.5% (N = 19) of them think Natural remedies are more secure than medicines. 41.8% (N = 18) of them think Medicines carried more harm than good. 26.9% (N = 11) of them think individuals who take medicines should pause their treatment for a while and then start them over. (chart 5)

The General-Benefit scale

80.6% (N = 34) of them think Without medicines doctors would be less able to cure people. 72.2% (N = 31) of them think medications contribute to help many diseased individuals to live better lives. 53.7% (N = 23) of them think that In most cases the benefits of medications outweigh the risks .38.9% (N = 17) of them think medications help many people to live longer . (chart 6)



### DISCUSSION:

Parkinson's disease patients adherence to their medications has not been studied enough. Patients non-adherence to their medications considered to be one of the most important reasons of non-responsive to treatment plan<sup>(8)</sup>.

we grouped our participants into two categories compliant or non-compliant to the medications prescribed by their doctors (All or None Rule). All written works detailed that all impacted elements on which patients 'compliance to their medications are numerous and more complicated'. For the previous purposes, the fundamental role of this research study was to survey the elements affecting medication's adherence among Arab Parkinson's disease patients, who have diverse societies, daily behaviours and beliefs in order to give suggestions for reinforcement of their healthcare and life's quality.

Out of the 43 patients incorporated in this study, 76.8% (N = 33) of the patients were non-adherent to Parkinson's Disease Medications (chart 1). However, this percentage must be improved.

The most common cause of Parkinson's disease patient's non-adherent was found to be forgetfulness, followed by Frequent medication (taking more than one pill a day) and then the side effects of the drugs and after that taking other medication (Non-Parkinson's disease drugs) and lastly the expense of treatment as explained in (chart 2).

Forgetfulness was observed to be the most well-known reason for non-adherence in different studies on various groups of patients. For instance, in an example of Chinese epilepsy patients the most widely recognized explanation behind non-adherence within this group of Chinese patients was forgetfulness in 69.6 %<sup>(9)</sup>. Another study presumed that "forgetfulness" is the principle purpose behind non-adherent in that studied group of patients<sup>(10)</sup>.

So, its not surprising to find forgetfulness to be the extreme recognised cause of non-adherence in our studied group of patients since they are usually old and have other complex health issues that require more medications to control.

What patients believe about their illness and how effective are the medications they use to control it are good predictors of their adherence<sup>(11)</sup>. Good inspiration along with a good demeanor toward the disease and treatment and not being afraid of complications clarify good adherence<sup>(12)</sup>

The relationship between the patients believes regarding their medications and their compliance was studied in this study. We concluded that patients with higher score in beliefs about medicines questionnaire were more adherent to their management plan than patients who got lower scores.

### CONCLUSION:

In our studied group of patients who were suffering from Parkinson's disease, we concluded that their medication-adherence needs to be improved. Living with Parkinson's disease is not easy due to its complex bio-psychosocial properties. It's not enough to diagnose and prescribe medications to patients in order to manage their condition. We need to follow them up and assess their adherence routinely as part of their management plan. Every patient is different, that's why we need to assess the contributing factors for their non-adherence individually. Patients' beliefs regarding their illness and medications should be assessed regularly as well. Caregivers have an important role in the process. They can be very effective by promoting medication adherence by for example giving regular positive feedback, especially because the nature of the illness in this group of patients usually has some psychological impact upon their health.

Additional researches are necessary to assess the impact of medication adherence and mental consideration on the management plan.

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