

NON-ADHERENCE – A CHALLENGE IN HEALTH MANAGEMENT¹*Syed Ahmed Arshad and ²Prof. Jamal Ara¹O level Student. Saint Michaels Convent School, Karachi, Pakistan.²Professor of Medicine. Creek General Hospital, Karachi, Pakistan.***Corresponding Author: Syed Ahmed Arshad**

O level Student. Saint Michaels Convent School, Karachi, Pakistan.

Article Received on 13/05/2020

Article Revised on 03/06/2020

Article Accepted on 24/06/2020

ABSTRACT

Aim; To determine the frequency of non-adherence to diet, medication and physical activity as a factor in the management of diabetic and hypertensive adult patients. **Methodology;** Cross sectional, observational one month study conducted on 100 adults who were diagnosed with diabetes, hypertension or both at Creek General Hospital, Karachi, Pakistan from December 2018 to January 2019. Non adherence to diet, physical activity and prescribed medicines was noted. A reason of non-compliance was explored. **Results:** Out of 100 subjects 44 were male (44%) and 56 consisted of females (56%). The results showed that 26 (26%) of the adults were diagnosed with diabetes, 39 (39%) of the patients were hypertensive and 35(35%) of the adults were diagnosed with both. Noncompliance to physical activity was 59%, to diet it was 42% and to medicine it was 36%. Males were more non-compliant to diet and medicines, while females were to physical activity. Regarding age groups, the elderly were most noncompliant to diet and medicine, while the middle age were to physical activity. Among reasons of noncompliance to any of the modality, being busy/lack of time was most prevalent (21%), followed by the lack of financial means (21%). **Conclusion:** Non-adherence to diet, medication and physical activity is a challenging factor in the management of diabetic and hypertensive patients.

KEYWORDS: Non-Adherence, Diabetes, Hypertension, Physical Activity.**OBJECTIVE**

To determine the frequency of non-adherence to diet, medication and physical activity as a factor in the management of diabetic and hypertensive adult patients.

INTRODUCTION

In the medical world, the word compliance is the extent to which a patient's behavior and action are in accordance to the doctor's instructions in terms of taking medication, adopting lifestyle changes, or keeping follow up with the physician.^[1] It is seen that the most challenging task for a clinician is to convince the patients to change and adopt a certain recommended lifestyle and have a regular intake of prescribed diet and medicines. This dilemma is mostly faced by doctors in long standing lifelong diseases like diabetes and hypertension. According to studies the rate of non-compliance is higher in developing countries compared to developed nations where the compliance is around 50%.^[2] In developing countries it is difficult for the doctors to overcome factors like low finances for medication, lack of education and awareness to comply with treatment and several other reasons from the patient's end to achieve a satisfactory maintained controlled result to chronic disease management.

Rationale of the study

The rationale of my study is to find out the extent of compliance in our community and to explore the reasons of non-adherence. Once causes of non-adherence could be identified the clinician could address those reasons to enhance better healthcare for the patients and in turn for the nation.

METHODOLOGY

This is a cross sectional, observational study conducted on 100 adults who were already diagnosed with diabetes or hypertension or had both. They were selected by convenient random sampling technique. Duration: The duration of study was 3 weeks from 17th December, 2018 till 4th January, 2019. Setting: Creek General Hospital, Korangi, Karachi, Pakistan. It is a tertiary care hospital catering to patients of a lower socioeconomic status. Inclusion Criteria: Subjects above the age of 18 years who are diagnosed with diabetes, hypertension or both (confirmed clinically or by its relevant investigations). Exclusion Criteria: Subjects below the age of 18 years or any patients who do not have any confirmatory evidence of having diabetes or hypertension. Consent was taken from the selected patients and relevant questions were asked about compliance to their specific modified diet according to their respective diagnosed disease.

Noncompliance to diet was noted in diabetic patients if they were taking food with high glycemic index or high fat diet or in hypertensive patients who were consuming food with high salt or lipid content more than three times a week. Duration of physical activities were inquired and recorded and noncompliance to activity was labeled if they were doing physical activity less than 150 minutes a week. Inquiry was done on their intake of medicine according to the dosage prescribed by the doctor and any noncompliance if present was taken into account. Reasons for noncompliance was explored and noted. Analysis of results was done by simple arithmetic calculations.

OBJECTIVE DEFINITIONS

Noncompliance to physical activity: Less than 150 minutes per week of moderate intensity of physical work or 75 minutes per week of vigorous physical activity.^[3]

Noncompliance to diet in diabetics: Failure to comply to the required diet pattern in diabetics which should be protein enriched diet, use of whole grain carbohydrates and unsaturated fats, and daily consumption of fruits, vegetables, low fat dairy products. There should be avoidance of sugar-sweetened products, Trans Fats foods, and white Bread, Pasta and Rice and bakery items.^[4,5]

Noncompliance to diet in hypertensives: Failure to comply to the DASH diet pattern in hypertensive which should be more fruits, vegetables, and low-fat dairy food, whole-grain foods, fish, poultry, and nuts. Cutting back on food that are high in saturated fat, cholesterol, and trans fats, sodium [1,500 milligrams a day (about 2/3 teaspoons)], sweets, sugary drinks, and red meat.^[6]

Noncompliance to Medicine: Failure to take prescribed medication or its dosage or to follow a prescribed course of treatment.

RESULTS

Out of 100 subjects 44 were male (44%) and 56 consisted of females (56%). The 100 patients were divided into 3 age groups. 52 (52%) patients were included into the criteria of elderly which is the age of 51 years and above. 47 (47%) patients were categorized into the middle age group which is between the age of 30 and 50 years. 1 subject was included into the criteria of

young which comprised of people below the age of 30 years. The results showed that 26 (26%) of the adults were diagnosed with diabetes, 39 (39%) of the patients were hypertensive and 35(35%) of the adults were diagnosed with both.

The frequency of non-compliance with respect to medicine, physical activity and diet is displayed in **Figure 01**. The frequency of non-compliance with respect to gender is showed in **Figure 02**. The frequency of non-compliance in respect to age groups is displayed at **Table 1**. The different reasons of noncompliance to any of the above parameters are exhibited in **Figure 03**.

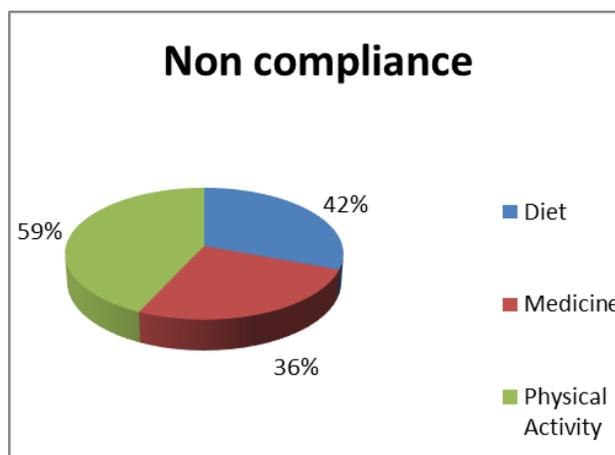


Fig. 01: Frequency of non-compliance to Diet, Medicine and Physical Activity (n= 100).

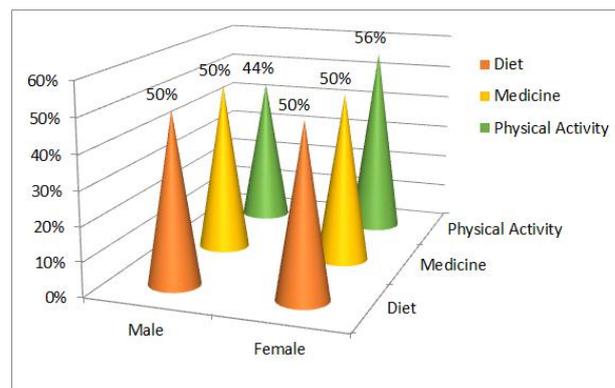


Fig. 02: Frequency of non-compliance with respect to Medicine, Physical Activity and Diet in male and female.

Table 01: Frequency of non-compliance with respect to diet, medicine and Physical Activity between the age groups of young, middle age and elderly. (Percentages shown in brackets are the percentages of noncompliance in that particular age group out of the total noncompliance found in that modality e.g. diet, medicine and physical activity).

Age Groups	Diet	Medicine	Physical Activity
Total noncompliant in that parameter	42	36	59
Young (total 1)	1(2%)	...	1(1.6%)
Middle age (total 47)	19(45%)	16(44%)	31(52.5%)
Elderly (total 52)	22(53%)	20(56%)	27(48%)

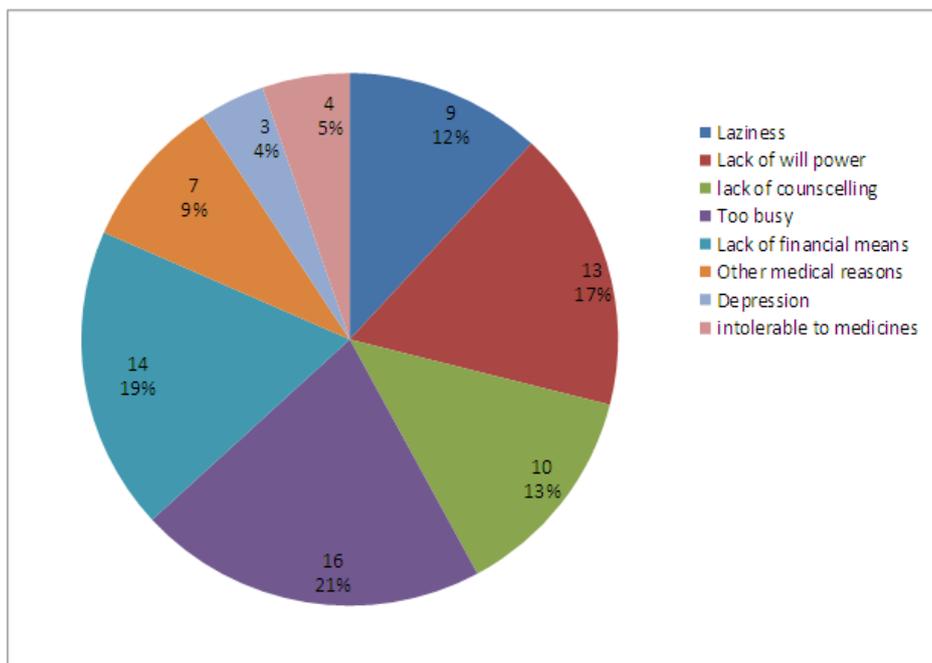


Fig. 03: Reasons for noncompliance in patients (n=100 patients).

DISCUSSION

Adherence to advice by the physicians is the ultimate factor when it comes to the management of patients especially in chronic longstanding diseases. This is the biggest challenge the physicians and patients have to face to improve the patient’s health. My study on diabetics and hypertensive patients in a low socio economic community showed that compliance was a major hurdle in the management of their diseases.

My research showed that adherence to medicine intake was higher as compared to the other parameters although the frequency percentage or the degree of noncompliance was alarmingly high in all parameters overall (more than a quarter).

The high frequency of noncompliance to walking or other physical activity is due to the fact that many of the patients said that they did not have the time and some also claimed to be unfit for any physical activity due to knee joint pains etc. Moreover a few of the patients admitted that they were too lazy to do any exercise. This displays that the counseling by health personnel should be persistent and intense because the lack of awareness to the significance of physical activity in the community is a major contributor to management of the disease.

The next parameter was diet to which nearly half of the patients were noncompliant. Most of them admitted they had lack of will power to change their diet according to the required dietary modification. A foremost factor the patients mentioned was the lack of awareness and information given to them by the physicians about the diet essentials and what they should be cautioned about. The unhealthy eating habits are also because of the junk

food culture that is highly prevalent in this society in all the communities.

One of the major contributions to noncompliance to medication is the lack of financial means to buy medicine regularly specially for long term. Intolerance to medication especially a stomach upset was a reason the patients gave to leave the medication on their own without any further consultation. A few patients were too depressed to wanting to treat themselves and some were neglected by the family so as to be provided medications. In his research Dosse mentioned that emotional stability is a factor in adherence to management of chronic illness.^[7]

The level of noncompliance to diet and medication being similar in both the genders showed that adherence to a healthy habits and regular intake of medicine lacked in both males and females simultaneously. The higher frequency of noncompliance to physical activity and physical activities in females was due to their confinement in their houses and the lack of awareness of the importance of physical exercise in order to regularize their sugars and blood pressures. However, Rao in his study claimed that females were more compliant than males.^[8]

The noncompliance to diet and medicine was higher in the elderly because of their gastric limitations due to which there is low appetite, intolerance to medications and food. There was also an element of neglect seen in the patients from their relatives. Kakumani has also mentioned forgetfulness as a reason of noncompliance.^[9] Depression and anxiety led to a discouraging approach to the betterment of their health. Physical activity was something that the middle age group was not doing

probably because of their bread earning responsibility and hence lacks of time and priority to exercise.

The study is an eye opener for the physicians and patients alike. It points to the fact that counseling for the compliance to medications and lifestyle modifications have to be stressed upon on both the sides for a healthy society. Yang has also emphasized that lifestyle modification such as physical activities and low intake of salt is essential for health management.^[10] Jaun J Gascon has also stated in his research that failure of the physician to explain the problems to the patient is also a major cause of nonadherence to management guidelines by the patient.^[11] The government should be involved in providing free medications which is easily accessible to all, and a nationwide campaign for awareness to workout, healthy habits and meals should be conducted through service by electronic media.

CONCLUSION

Non-adherence to medication, physical activity and diet is highly prevalent in diabetics and hypertensive subjects and should be taken in account by clinicians while managing patients with chronic disease.

REFERENCES

1. Khan AR, Al-Abdul Lateef ZN, Al Aithan MA, Bukhamseen MA, Al Ibrahim I, Khan SA. Factors contributing to non-compliance among diabetics attending primary health centers in the Al Hasa district of Saudi Arabia. *J Family Community Med*, 2012; 19(1): 26-32. doi:10.4103/2230-8229.94008
2. WHO: A report; Chronic Diseases - Poor compliance of Patients with drug treatment [online] [Last cited on 2010 Oct 02] [Last accessed on 2011 Aug 01]. Available from: <http://www.bio-medicine.org/medicine-news/In-Chronic-Diseases---Poor-compliance-of-Patients-with-drug-treatment--2097-1/>
3. Partridge AH, Avorn J, Wang PS, Winer EP. Adherence to therapy with oral antineoplastic agents. *J Natl Cancer Inst.*, 2002; 94: 652-61.
4. Physical Activity and Adults https://www.who.int/dietphysicalactivity/factsheet_adults/en/.
5. 11 Foods to Avoid with Type 2 Diabetes – Healthline. <https://www.healthline.com/nutrition/foods-to-avoid-with-diabetes>.
6. DASH Diet and High Blood Pressure. <https://www.webmd.com/hypertension-high-blood-pressure/guide/dash-diet#1>.
7. Dosse, Camila, Cesarino, Claudia Bernadi, Martin, Josse Fernando Vilela et al. Factors associated to patients noncompliance with hypertension treatment. *Revista Latino-Americana de Enfermagem*, 2009; 17(2): 201-206.
8. Rao CR, Kamath VG, Shetty A, Kamath A. Treatment Compliance among Patients with Hypertension and Type 2 Diabetes Mellitus in a Coastal Population of Southern India. *Int J Prev Med*, 2014; 5(8): 992-998.
9. Kakumani KV, Waingankar P. Assessment of Compliance to Treatment of Diabetes and Hypertension amongst Previously Diagnosed Patients from Rural Community of Raigad District of Maharashtra. *J Assoc Physicians India*, 2016 Dec; 64(12): 36-40
10. Yang MH, Kang SY, Lee JA, et al. The Effect of Lifestyle Changes on Blood Pressure Control among Hypertensive Patients [published correction appears in *Korean J Fam Med*, 2017 Sep; 38(5): 311-312]. *Korean J Fam Med*, 2017; 38(4): 173-180. doi:10.4082/kjfm.2017.38.4.173
11. Jaun J Gascon, Montserrat Sanchez-Ortuna, Bartolome Llor, David Skidmore, Pedro J Saturno. Treatment Compliance in Hypertension study Group. *Family Practice*, April 2004; 21(2): 125-130.