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Research Article

Effect of *Riyazat* and *Tadabeer-E-Ghiza* on Glycemic Status Among Type 2 Diabetes Mellitus Patients in Selected Hospitals of Delhi: A Non-Randomised Control Study

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A B S T R A C T

Objective: This study is an experimental study (non-randomized control) to assess the *Riyazat* and *Tadabeer-e-ghiza* (lifestyle modification package) on glycemic status among type 2 DM patients who are on hypoglycemic drugs in selected hospitals.

Methods: The study was designed in two groups with 30 participants in each group; one group was given a *Riyazat* and *Tadabeer-e-ghiza* with conventional treatment, and the other group was given conventional treatment only. The study was carried out at Majeedia Unani Hospital and Hakim Abdul Hameed Centenary Hospital, Jamia Hamdard, New Delhi.

Results: In this study, the *Riyazat* and *Tadabeer-e-ghiza* proved to be effective and showed significant improvement in reduction of average fasting blood sugar (175.5±32.3 to 144.7±17.6), postprandial blood sugar (275.5±61. to 199.0±48.3), and Glycosylated hemoglobin (HbA1c) (9.3±1.5 to 8.4±1.3) at 12 weeks.

Conclusion: This study concluded that Riyazat and diet modification were effective in the management of high blood sugar and HbA1C in type 2 DM patients. It is very useful in improving their diabetes related symptoms.

Keywords: Diabetes Mellitus, Glycemic Status, Unani, Lifestyle Modification

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Introduction

Diabetes Mellitus (DM) is a chronic metabolic disease characterized by increased levels of plasma blood glucose (or blood sugar), which leads to serious damage to the heart, blood vessels, eyes, kidneys, and nerves when not controlled over a long time. Type 2 diabetes is the major form of diabetes, and it accounts for at least 90% of all cases of diabetes mellitus.[1] It is a heterogeneous disorder caused by a combination of genetic factors related to impaired insulin secretion, insulin resistance, and environmental factors such as obesity, overeating, lack of exercise, and stress, with increased risk in those above 30 years of age.[2] The disease involves a variable degree of beta-cell dysfunction as well as hepatic insulin resistance, resulting in glucose overproduction. It remains a major global concern and leading cause of death in most countries.

Globally, treatment aims in the management of DM cover both lowering of blood glucose to near-normal levels and correcting metabolic abnormalities and cardiovascular risk factors, including weight management. Glucose control in type 2 diabetes deteriorates progressively over time and needs intervention with glucose-lowering agents to obtain good control. Glucose-lowering agents include hypoglycemic drugs such as sulfonylureas, biguanides, meglitinides, α-glucosidase inhibitors, and thiazolidinediones; insulin; and other agents.[3] that improve glucose control. Although the initial response of these hypoglycemic drugs is usually good, over the long term, many of these frequently cause insulin resistance, lose their efficacy, and give rise to various side effects (such as hypoglycemia, weight gain, anorexia, diarrhea, flatulence, abdominal distension, metallic taste in the mouth, etc.).[3]

In the Unani system of medicine (USM), prevention of diseases is centered on adherence to *Asbab-e-sitta zaroriyah,* which is essential for a healthy life. Ancient Unani scholars advised different *ghiza* for type 2 DM patients, like *ma-ul-qara, ma-ul-khayar, aab-e-anar tursh, luaab-e-aspaghol,* and *ma-ul-shaeer*. Allama Qarshi, in his book Jamiul Hikmat, also advises many *foods* for type 2 DM patients, including a soup of tomato, fish meat, pickles, carrots, spinach, onions, almonds, walnuts, groundnuts, soda water, etc.[4,5] For the management of type 2 DM, *tadabeer-e-ghiza* plays a major role because modern science has proved that diabetes is an impaired metabolism of fats, carbohydrates, and proteins. If we correct the metabolism by diet, we can manage diabetes.[4,5] Unani physicians in ancient times paid great attention to this important task in a rational way. They explained the concept of health and key factors, which are essential for the maintenance of health. Among them, *Riyazat* (exercise) is the valuable tool for the maintenance of health. Ibn Sina, an ancient Unani scholar, mentioned in his text that a person who is doing regular exercise at a given time will be saved from all temperamental and humoral disturbances in the body. Eminent Unani scholars have also mentioned in classical texts that *riyazat*/exercise and proper diet *(Ghiza)* play a major role in managing Type 2 DM or similar endocrine diseases.[4,5] Hence, there is a need to promote a good framework for the management of type 2 DM by intervening with different regimens like *riyazat*/exercise and *Tadabeer-e-ghiza.* With this understanding and to further explore the role of *riyazat*/exercise and *Tadabeer-e-ghiza* in the management of Type 2 DM, this intervention study was carried out.

Materials And Methods

Study Design and Setting

This study was designed as a non-randomized interventional study with a control and was conducted in Majeedia Unani Hospital and HAHC Hospital, Jamia Hamdard, New Delhi, to assess the effect of a lifestyle modification package on glycemic status among type 2 DM patients who are on hypoglycemic drugs in selected hospitals. The study had two groups; one group was given a lifestyle modification package with conventional treatment, and the other group was given conventional treatment only.

Eligibility criteria

Sixty participants were included who were diagnosed cases of type 2 DM for one year or longer, clinically stable, and with fasting blood sugar (FBS) ≥126mg/dl, postprandial (PP) > 200 mg/dl but less than 299mg/dl. Patients of both gender with age of 40 years and or above given their written consents, were included. Patients were on oral hypoglycaemic drugs, and had no co-morbid conditions.

Interventions

A lifestyle modification package on *riyazat*/exercise (activity chart) and tadabeer-e-ghiza *diet* charts was given to 30 diabetic participants who were on hypoglycemic agents. Exercise included 150 minutes per week divided into 5 days a week, i.e., 30 minutes per day or 50 minutes per day for any three days of the week, which included, per session, weight training for 10 minutes, brisk walking for 10 minutes, and special postures for 10 minutes.

Patients were called for two days in a week (working days), e.g., Monday and Thursday. For the rest of the days, the subjects were continuing their physical activity schedule as advised at home. In case of any problem, the participants were advised to contact the researcher. The researcher also contacted all the patients regularly and visited the near ones if they didn't follow the exercise and diet regimes.

The primary outcome measures for this study were blood sugar, blood sugar PP, and HbA1c on day zero and after days' completion.

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Statistical Analysis

The data were entered in Microsoft Excel 2010 and analyzed using SPSS version 17.0. The difference in proportions between categorical variables was assessed using the chi-square or Fisher's exact test. The means of continuous variables between the experimental and control groups were assessed by a student t test, whereas the effect of intervention in the experimental group was tested using a paired t test. A P value < 0.05 was considered statistically significant.

Ethical Approval and Consent

The study was approved by the Institutional Ethical Committee and RPAC of Jamia Hamdard, New Delhi. The investigators of the study followed good clinical practices.

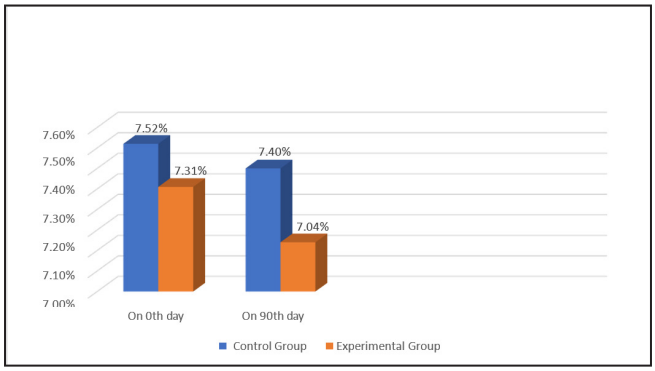


Figure 1.Role of Riyazat and Tadabeer-e-ghiza on HbA1c

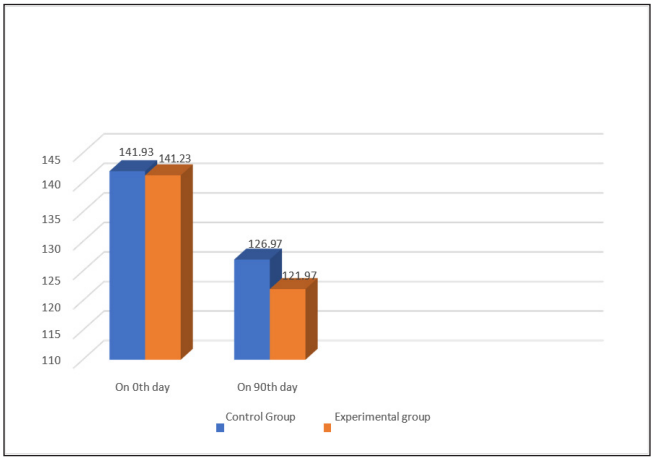


Figure 2.Effect of lifestyle modification package on fasting blood sugar (mg/dl) in both groups

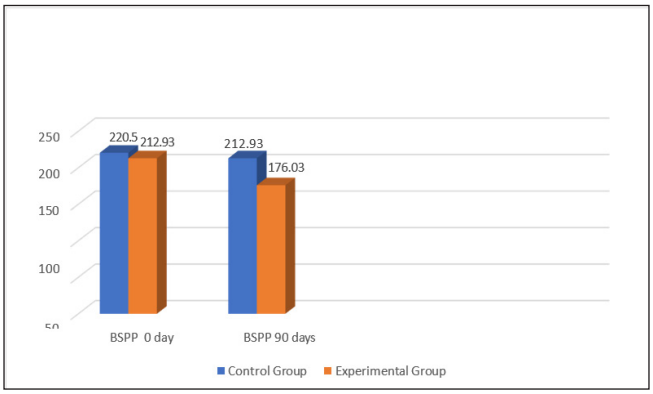


Figure 3.Effect of life style modification package on Blood Sugar (mg/dl) Post prandial in both the groups

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Table 1.Comparative blood sugar values in the experiment and control group

	Experimental group	Control group	P value
Blood Sugar Fasting, mg/dl	141.23+ 26.23	141.93+ 28.50	<0 .001
Postprandial Blood Sugar mg/dl	212.93+ 41.28	220.50+ 41.07	<0 .001
HBA1c	7.31+ .96	7.52+ .96	<0 .001
BMI	26.26+ 3.21	26.63+ 4.01	<0 .001

Results

The role of Riyazat and Tadabeer-e-ghiza on HbA1c was assessed in the experimental group in comparison with a control group and was inferred that there was a significant decrease in HbA1c in the experimental group in comparison with the control group. This difference was found statistically significant ($p<0.001$).

The effect of Riyazat and Tadabeer-e-ghiza in the experimental group on fasting blood sugar was assessed, it was found that there was more decrease in fasting blood sugar in the experimental group in comparison to the control group, and it was found highly statistically significant ($p<0.001$).

The role of Riyazat and Tadabeer-e-ghiza on blood sugar post-prandial was assessed in the experimental group in comparison with the control group, who only received medication. It was inferred that there was a significant decrease in BSPP in the experimental group in comparison with the control group was found statistically significant ($p<0.001$).

The effect of Riyazat and Tadabeer-e-ghiza in the experimental group on blood sugar fasting, PSPP and HbA1c was assessed; it was found that there was more decrease in blood sugar fasting, BSPP, and HbA1c in the experimental group in comparison to the control group, and it was found highly statistically significant ($p<0.001$).

Discussion

The present interventional study on DM type 2 (diabetes *shakri*) patients was conducted in the Medicine OPD of HAHC Hospital and in Majeedia Unani Hospital, Jamia Hamdard, New Delhi, among 60 patients to assess the effect of a lifestyle modification package consisting of *Riyazat and Tadabeer-e-ghiza* on the management of DM type 2.

The majority of the subjects, 58 (93.33%), were in the age group of 40-60 years. The data indicates a relatively higher prevalence of DM type 2 in the age group of 41-50 years (79%). This data is supported by the literature that DM type 2 is most common after the age of 40 years.[6] Similar results were reported in the studies conducted by DECODA, which also observed a similar association and reported that the age at which the peak prevalence of diabetes was reached was ~10 years younger in Indian compared with Chinese and Japanese subjects.[7] So, it gives a strong indication that preventive measures should commence at an early age. Dietary restrictions and physical activity can be an important tool in the primary prevention of type 2 DM.

Total female patients were 35 (58%) in both groups. These findings showed a higher prevalence of DM type 2 in females. It is merely a chance that more female patients visited at the time of the study. A review of studies in Indian communities shows conflicting results in gender distribution. Some studies from North India showed more prevalence of type 2 DM in females, while other studies in Southern India reported higher prevalence in males.

The majority of the patients, 35 (58.33%), belonged to the Hindu community, and 42 (70%) were married and 18 (30%) were unmarried in the study group. It can be attributed to the fact that after marriage, people don't do physical activities, which can lead to obesity and a greater risk of type 2 DM.

In the present study, the maximum subjects were educated up to the primary level only (23.33%), and 61.66% of patients were unemployed, as more patients were non-working housewives. The majority belonged to the middle or lower classes.

A new transition is seen in the association of socioeconomic status and diabetes. DM is now also prevalent among the low-SES people in India. In North India, it was shown that even the slum dwellers had a high prevalence of obesity, glucose intolerance, and dyslipidemia.[8] Rapid urbanization, especially in the National Capital Region of India, has rapidly changed the lifestyle and diet of the rural population and has turned the small-scale farmers into urban vendors and factory workers dwelling in slums.

Among 60 cases, there were 38 (63.33%) who were also obese and overweight; 22 (36.66%) patients had normal BMIs. This shows that the majority of the patients were overweight and obese, which is a risk factor for DM type 2. The mean BMI of the control group was 26.63 before the intervention, while that of the experimental group was 26.26. At the end of the study, both groups had a decreased

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BMI, with better results in the experimental group (26.58 in the control group and 26.07 in the experimental group). The results were highly significant ($p < 0.001$).

Before the intervention, the mean glycated hemoglobin (HbA1c) of the control group was 7.52, which decreased to 7.40 at the end of the study. In the experimental group, the mean HbA1c level was 7.31 before the intervention and 7.04 at the end of the study. The decrease in HbA1c level was found to be statistically significant ($p < 0.001$). Many studies have depicted a constant beneficial effect of regular physical activity training on improvements in HbA1c level.[9]

There was a marked decrease in post-prandial blood sugar (PPBS) levels in the experimental group. Before intervention, the mean PPBS was 220.50 in the control group and 212.93 in the experimental group. After the intervention, the mean PPBS was 205.93 in the control group and 176.03 in the experimental group. There was a statistically significant ($p < 0.001$) decrease in fasting blood sugar (FBS) in both groups, which was more pronounced in the experimental group. The mean FBS was 141.93 in the control group and 141.23 in the experimental group before the intervention. At the end of the study, the mean FBS was 126.97 in the control group and 121.97 in the experimental group.

It can be inferred from the study that Riyazat and diet are effective in the management of the FBS, PPBS, and HbA1C in type 2 DM patients. It is very useful in improving their DM type-related ailments' symptoms. With conventional therapy, it is just as important in improving the lifestyle and physical health of type 2 DM patients.

Conclusion

Based on this study, it can be concluded that the lifestyle modification package, which included *(Riyazat, & Tadabeer-e-Ghiza*), has a significant role in the management of DM type 2. Therefore, it can be used as an adjuvant regimen for the DM type 2 patient for the betterment of the patients.

References

1. Kautzky-Willer A, Harreiter J, Pacini G. Sex and gender differences in risk, pathophysiology and complications of type 2 diabetes mellitus. Endocrine reviews. 2016 Jun 1;37(3):278-316. [Google Scholar]
2. Ozougwu JC, Obimba KC, Belonwu CD, Unakalamba CB. The pathogenesis and pathophysiology of type 1 and type 2 diabetes mellitus. J Physiol Pathophysiol. 2013 Sep 30;4(4):46-57. [Google Scholar]
3. American Diabetes Association. Summary of Revisions: Standards of Care in Diabetes 2025. Diabetes Care 2025;48(Suppl. 1): S6-S13. https://diabetesjournals.org/care/article/48/Supplement_1/S6/157564/Summary-of-Revisions-Standards-of-Care-in-Diabetes
4. Ahmed, S.I., 2009. Introduction to Al-Umur-Al-Tabi'Yah. New Delhi: CCRUM, pp.75-142. https://journals.stmjournals.com/article/article=2026/view=248276/
5. Majusi, A.I.A., 2010. Kamil Al-San't. [s.l.]: CCRUM, Vol. 2, Part-2, pp.192-193.
6. Franz MJ, Powers MA, Leontos C, Holzmeister LA, Kulkarni K, Monk A, Wedel N, Gradwell E. The evidence for medical nutrition therapy for type 1 and type 2 diabetes in adults. Journal of the American Dietetic Association. 2010 Dec 1;110(12):1852-89. [Google Scholar] [PubMed]
7. Nanditha A, Ma RC, Ramachandran A, Snehalatha C, Chan JC, Chia KS, Shaw JE, Zimmet PZ. Diabetes in Asia and the Pacific: implications for the global epidemic. Diabetes care. 2016 Mar 1;39(3):472-85. [Google Scholar] [PubMed]
8. Misra A, Pandey RM, Rama Devi J, Sharma R, Vikram NK, Khanna N. High prevalence of diabetes, obesity and dyslipidaemia in urban slum population in northern India. International journal of obesity. 2001 Nov;25(11):1722-9. [Google Scholar] [PubMed]
9. Fazil, M. and Nikhat, S., 2017. Health benefits of Riyazot (exercise): a critical review. Indian Journal of Unani Medicine, 10(1), pp.41-46.

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