CASE STUDY

Impact of Counseling on Patient Education and Dietary in Quality of Lifestyle and Nutritional Anemia in Diabetes Mellitus Patient: A Case-Control Study

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ABSTRACT

The study's goal was to see how w education and dietary guidance improved the quality of lifestyle and nutritional anemia in people with diabetes type 2. This 6 month prospective study was conducted in a hospital in Jaipur, Rajasthan. The demographic information (age, gender, social position, and economic status) was gathered using a form HRQoL after gaining the patient's assent. In the intervention group n is 21 and also in the control group n is 21 so the total; patient was chosen 42. The baseline Hb and health-related quality score were taken in consideration in 1, 2 and baseline visits in a month-long study as a part of the design. Each visit concluded with the measurement of the hemoglobin level and health-related quality of life scores for both the intervention and control groups. The intervention group's Hblevel changed significantly more than the control group's after the nutrition education intervention finished [0.56–0.40 vs. 0.16–0.82 gm/dl, p = 0.002]. In contrast to the control group, where the mean increase in general health from baseline to second follow-up was statistically insignificant, the intervention group's mean increase in general health from baseline to second follow-up was found to be significant as from the result obtained. Thus, nutrition education was found to be substantially linked to higher Hb levels, better dietary consumption, and improved health-related quality.

Keywords: Diabetes mellitus, Anemia, Haemoglobin, Nutrition Education.

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INTRODUCTION

Diabetes mellitus (DM) is a carbohydrate metabolic condition that causes hyperglycemia as a result of either absolute insulin insufficiency or decreased tissue responsiveness to insulin, or both. It is a common and disabling condition that can result in blindness, anemia, amputation, brain difficulties, kidney disease, and cardiovascular issues, among other things, impairing functional capacity, autonomy, and quality of life. Anaemia has a significant detrimental influence on the quality of life of diabetics and is connected to disease progression and the development of co-morbidities.[1,2]

Patient counseling is a process that encourages patients to change bad eating and lifestyle choices, as well as improves their capacity to manage their condition and make informed decisions about their medication. The physical, psychological, and social facets of health are directly impacted by therapeutic outcomes in healthcare, which in turn impacts the overall health-related quality of life. A sufficient understanding of the illness improves their ability to accept and manage it psychologically. Therefore, nutrition counseling is a great way to treat diabetes symptoms in a meaningful and constructive way. Patients with diabetes should get continuing education and counseling to reinforce the need of behavioral, preventative, pharmacological, and risk factor modifications.[3]

MATERIAL AND METHODS

Study Design: A Prospective single-centered study**;** Duration: 6 months.

Inclusion Criteria: Age (18–65 years)**,** gender (Male and Female), inpatients and outpatients**,** diabetes mellitus type-2 diagnosed patients allied with anemia**,** patient willing to fill out the consent form.

Exclusion Criteria: Diabetes mellitus type-1 (T1DM) patients, under 18 years and above 70 years, diabetes mellitus type-2 (T2DM) patients diagnosed with kidney disease, T2DM patients undergoing chemotherapy, Patients not willing to fill out consent form.

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Sources of Data: Patient and bystander interview, patient case sheet record

Study Material

Informed Consent Form: In order to recruit patients in the experiment, an informed consent form and a patient information sheet in Hindi and English were prepared.

Patient Data Input Form: A separate data entry form was built to capture the relevant data collected from the sources, including patient demographics, date of admission, past medication history, diagnosis, current medication, laboratory diagnostic, and sets of questionnaires.

Study procedure: The demographic information (age, gender, social status, and economic position) was gathered using an appropriate data collecting form following patient consent. In the study design, 21 in group of intervention and 21 in group of control were taken and various parameters were analyzed. Data was obtained in the local language. The following topics were intended to be covered in the counseling: general knowledge of DM (causes, diagnosis, normal blood glucose levels, and complications), lifestyle adjustment (diet, weight loss, physical activity, and stopping risk factors), and medication. The counseling was given to the group having control. At the conclusion of the first and second visits, the intervention groups and the control groups had their haemoglobin levels and health-related quality of lifestyle scores were measured.[4-7]

Measures of Study Outcomes: The influence of food and nutrition education on type 2 diabetic patients' hemoglobin levels following intervention was the study's main goal.

Table 1: Characterization based on age

S. No.	*Age*	*Male*	*Female*	*%of Patient in group*
1	30–39	1	3	9.52
2	40–49	1	2	7.14
3	50–59	4	7	26.19
4	60–69	10	14	57.14

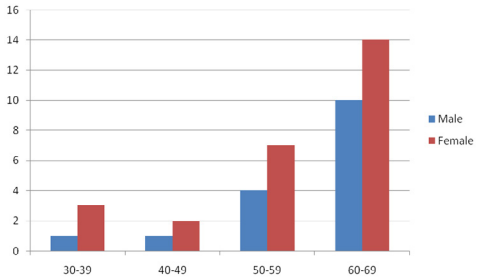

Figure 1: Age distribution in study population

Table 2: Characterization based on educational qualification

S. No.	*Qualification*	*Total No. of patients*	*%of Patient in Group*
1	Illiterate	23	54.81
2	Primary level	14	33.31
3	Tertiary level	5	11.92

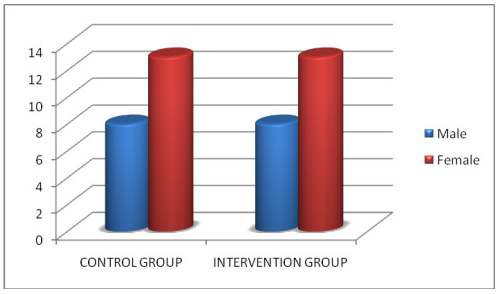

Figure 2: Categorization based on gender

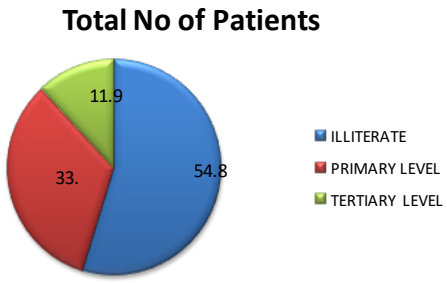

Figure 3: Percentage of patients' educational qualification

Table 3: Characterization based on occupational Status

S. No.	*Occupation*	*Total no of patients*	*% of patients in group*
1	Private job	6	14.29
2	Business	10	23.81
3	Government job	3	7.14
4	Daily wage worker	5	11.90
5	House wife	18	42.86

Table 4: Comparison of primary outcome variables

Variables taken	*Group control (CG) mean ± SD*	*Group intervention (IG) mean ± SD*	*p-value*
Hb level of blood Base line data	10.18 ± 0.62	9.99 ± 0.87	0.209
End line data	10.35 ± 0.64	10.55 ± 0.79	0.144
Change	0.16 ± 0.82	0.56 ± 0.40	0.002

At the start of the trial, the subjects had mild anemia (9–10.9 gm/dL). Following IG, one-third of the IG had substantially higher Hb levels than the CG (0.56–0.40 gm/dL versus 0.160.822 gm/dL, p <00.005).

Changes in blood sugar, body weight, nutritional knowledge, and dietary consumption were examples of secondary outcomes.

Statistics: Data were analyzed using SPSS v22. Obtained data were analyzed as mean SD. Student t-test was also used to determine the difference in the group. This was used to evaluate how the quality of life scores changed.

RESULTS AND DISCUSSION

Of the 42 study participants enrolled in the study, there was a female predominance (26, 61.9%). The age-wise distribution

Table 5: Quality of life score

QOL	*CG (mean ± SD)*	*IG (mean ± SD)*
Domain (Health-General)		
Baseline	11.57 ± 1.35	11.43 ± 1.30
1st follow-up	11.70 ± 1.44	13.10 ± 1.15
2nd follow-up	11.90 ± 1.70	13.15 ± 1.35
Domain (Physical function)		
Baseline	11.37 ± 1.35	11.03 ± 1.56
1st follow-up	11.63 ± 1.29	12.67 ± 1.09
2nd follow-up	11.70 ± 1.51	13.63 ± 1.40
Domain (Social function)		
Baseline	11.23 ± 2.51	11.97 ± 4.07
1st follow-up	11.40 ± 2.55	12.50 ± 1.79
2nd follow-up	11.23 ± 2.44	13.43 ± 2.30
Domain 4 (Role limitation)		
Baseline	11.63 ± 1.81	11.97 ± 4.07
1st follow-up	11.77 ± 1.79	13.50 ± 1.75
2nd follow-up	11.90 ± 1.80	14.40 ± 1.92

shows that 57.1% of the study participants were found to be within the age group 60 to 69 (Table 1 and Figure 1). The majority of the study participants were illiterates (23,54.8%), primary level education holders (14,33.3%) and few had attained tertiary level education (5, 11.9%). The data are shown in Table 2 and Figures 2 and 3. Table 3 represents characterization based on occupational status. Table 4 discusses about Comparison of primary outcome variables. Table 5 enumerates the quality of life.

CONCLUSION

The study summarized that the provision of nutrition and disease education for patients was found to be associated with improved hemoglobin, better understanding of disease and enhanced health-related quality of life.

REFERENCES

1. Whiting DR, Guariguata L, Weil C, Shaw J. Diabetes Atlas: Global estimates of the prevalence of diabetes for 2011 and 2030. Diabetes Res Cli Pract. 2011; 94(3):311-21.
2. Kassebaum NJ, Jasrasaria R, Naghavi M. A systematic analysis global anemia burden from 1990 to 2010. Blood. 2014; 123: 615-624.
3. Lewis RK, Lasack NL, Lambert BL.Connor SE. Patient counselling focus on maintenance therapy. Am J Health Syst Pharm. 1997; 54:2084-97.
4. Ramanath K. Santhosh YL. Impact of clinical pharmacist provided patient education on QOL outcome in type 2 diabetes mellitus in rural population. Asian J Pharm Clin Res 2011:4:15-20
5. Shivasharanappa JA, Biradar SS, Srinivas R, Raghu YR, Ravi PD. Assessment of pharmacist mediated patient counseling on quality of life in type 2 diabetes patients at a tertiary care hospital. Indo Am J Pharm Res. 2014;4:3468-76.
6. Sharifiard GH, Enttezari MH. The effectiveness of education of nutrition on diabetic patients type 2:The application of the model of health belief. J. Diab Lipid Iran 2008,7(4)379-389.
7. Milenkovic T, Gavrilovic S, Percan V, Petroveski G. Influence of diabetic education on patient well-being and metabolic control. Diabetol Croat. 2004: 33(3):95-98.