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Multidimensional Intervention on Self-Management and Quality of Life of type 2 Diabetes patients

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ABSTRACT

Background

In India as well as in the world diabetes has become a major public health issue (Chavan et al., 2015), where one in every 11adults has diabetes. In this 21st century diabetes is one among the largest global health emergencies, as around 425 million people are suffering from diabetes throughout the world and by the year 2045 this number may increase to 629 million (IDF Atlas, 2017). New case is diagnosed every 40 seconds (King et al., 1998). In the year 2015 approximately, 5 million adults died from diabetes and its complications. Approximately, 75% people with diabetes are from countries limited income in which majority of them is in the age group of 40-59 years. According to International Diabetes Federation (IDF) further rise in the status of diabetes can be expected as the trend shows the clear indication of rise of diabetes incidences globally. Considering South East Asia, 82 million are suffering from diabetes and 72.9 million cases are from India alone (IDF Atlas, 2017).

Methods

A quantitative approach was used as the aim of study was to determine the effectiveness of multidimensional intervention (MDI). A quasi experimental design and sample size of 180patients was adopted, experimental group (n=90) and control group (n=90). Purposive sampling technique was used to select the sample. The patients in the experimental group received routine care along with MDI and patients in the control group received only routine care.

After baseline assessment experimental group received educational session and self-management booklet were given before discharge. Control group did not receive

these interventions and follow up was done for both the groups respectively during the third and sixth month at outpatient department.

Baseline measures and post-tests were carried out before and after the intervention in both the groups. The data collection instruments used in the study were demographic proforma, quality of life Instrument for Indian Diabetes Patients (QOLID) and Diabetes self-management questionnaire (DSMQ), Diabetes knowledge questionnaire. Data were analyzed using descriptive and inferential statistics.

Results

The analysis related to sample characteristics revealed that, patients in the experimental group and the control group were having similar characteristics. The present study conducted to determine the effectiveness of a multidimensional intervention in terms of change in HbA1c, BMI, quality of life, self-management and knowledge of diabetes.

A total of among 68.8% in the experimental group and 58.8% in the control group had HbA1c level was in excess of 7 gm%. The mean pre-test HbA1c value of 9.22 ± 2.67 was decreased to 7.75 ±1.71 in experimental group against the mean pre-test HbA1c value of 8.09 ± 2.11 to post test HbA1c value of 7.61 ±1.61 in control group. Significant reduction is evident in post test HbA1c value among type 2 diabetes patients who received multidimensional intervention (1.47 ± 0.96) in comparison with control group (0.48 ± 0.5). The repeated measures on HbA1c value between the groups revealed a higher statistical significance.

The mean pretest BMI value of 25.04 ± 2.77 was decreased to 24.84 ± 2.54 in experimental group against the mean pre-test BMI value of 24.79 ± 2.82 to post test

BMI value of 24.85 ± 2.61 in control group. Slight reduction was found in post test BMI value of type 2 diabetes patients who received multidimensional intervention (0.2 ± 0.23) in comparison to control group (0.06 ± 0.21) where it increased fractionally. Reduction of BMI value was not statistically significant (p<.05).

There was a significant improvement in the mean post test score of self-management was evident. 23.21 was the mean self-management score in both experimental group (SD $^{+}$/- 4.04) and control group(SD $^{+}$/-3.76) at baseline, which has been increased significantly to 30.30($^{+}$/-4.20) in experimental group and 24.66 ($^{+}$/-4.25) in control group.

Quality of life mean score at baseline in the experimental group was 87.86 ($^{+}$/-9.86) and control group was 85.81($^{+}$/-6.92) which were significantly increased in the experimental group 103.93($^{+}$/-10.03) and control group 90.54 ($^{+}$/-6.91) at post-test.
Mean knowledge score of type 2 diabetes patients at baseline in the experimental group was 8.17 ($^{+}$/-2.29) and control group was 8.79 ($^{+}$/-1.83) which were significantly rose in the experimental group 13.09 ($^{+}$/-2.05) and control group 9.72($^{+}$/-1.69) at post-test.

Conclusion

The focus of this trial was to formulate a multidimensional intervention for type 2 diabetes patients and evaluate the effectiveness of the interventions on HbA1c, BMI, knowledge about diabetes, self-management and quality of life. The multidimensional intervention provided for the experimental group proved its effectiveness on improving on selected outcome measures among type 2 diabetes patients.