Impact of Patient Counselling on The Knowledge, Attitude, Practice and Quality of Life in Patients with Hypertension with Diabetes Mellitus-II

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ABSTRACT

Context: The most important role of patient counselling is to improve quality of life and provide quality care for patients. The occurrence of drug related problems such as adverse effects, side effects, drug interactions and errors in use of medication can be minimised. **Aims:** The main aim of this study was to assess the impact of pharmacist provided patient counselling on treatment outcomes and quality of life (QOL) in hypertensive and diabetes mellitus type-II patients, improving their knowledge, attitude and practice. **Methods and Material:** It is a Prospective interventional study. Patients selected were divided into control and test groups. Patients in the test group were counselled and given information about the management of disease, whereas control group received the information only at the end of the study. The follow-up was carried out over a period of 6 months in which the KAP and quality of life of the patients was assessed. The scores were evaluated and statistically analysed. **Results:** It was found that patient counselling had improved quality of life with respect to Physical component summary. The MCS was not affected by patient counselling. Mean scores of systolic, diastolic blood pressure and blood sugar levels before and after counselling for test groups were found to be significantly different. **Conclusion:** Our study confirms that improvement in knowledge of the disease and its management had positive impact on treatment outcomes and quality of life. It is noticed that counselling had no effect on mental component summary of the patient's quality of life.

Key words: Quality of Life, Hypertension, Diabetes Mellitus, Patient Counselling, Type II Diabetes.

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INTRODUCTION

In modern days pharmacist are aware of the fact that the practice of Pharmacy has grown over the years to include not only compounding and dispensing of medication to patients but also interaction with the patients and other Healthcare providers through provision of Pharmaceutical care.

The most important role of patient counselling is to improve quality of life and provide quality care for patients. The occurrence of drug related problems such as adverse effects, side effects, drug interactions and errors in use of medication and non other

and student mint program reduce quality of life and interfere with quality care.[1-4]

In addition to reducing drug-related morbidity and its subsequent costs to the individual and Society. Patient counselling main benefit patients in number of other ways concerning improved outcomes and satisfaction with care.[5-8]

It can be summarised that it is well documented that safe and effective drug therapy occurs most frequently then patients are well informed about medications and their use. It is the responsibility of pharmacists to counsel patients before dispensing

medications. Counselling is the sympathetic interaction between pharmacist and patient, it may go beyond a conveying of straight forward information about the drug and how and when to use it.[9-13]

Knowledge, attitudes and practices (KAP) studies are highly focused evaluations that measure changes in human knowledge, attitudes and practices in response to a specific intervention, usually outreach, demonstration or education. Attitude and practices of the community, paramedical personnel and medical practitioners on particular topic or subject. It reveals increases in knowledge, changes in attitudes towards diabetes and hypertension, as well as changes in the kinds of practices that are followed regarding management of diabetes and hypertension.[14-16]

Each knowledge, attitudes and practices study is unique to a particular setting and designed for a specific issue. KAP studies focus specifically on the knowledge Karma attitudes and practices (behaviours) for a certain topic.[17-19]

Diabetes mellitus is a group of metabolic diseases characterized by high blood sugar levels, that results from defects in insulin secretion, or action, or both. Blood glucose levels are controlled by insulin, a hormone produced by the pancreas. Insulin lowers the blood glucose level[20]

Subish Palaian, Leelavathy D. Acharya et al.,[21(2009)] knowledge, attitude, and practice outcomes: evaluating the impact of counselling in hospitalized diabetic patients in India: they evaluated the results of counselling selected hospitalized diabetic patients about their medications, disease, Lifestyle modifications in terms of Knowledge, attitude and practice outcomes via regular bedside meetings, distribution of information leaflets command and regular follow up for two months period. They found that patient counselling by a clinical pharmacist improve knowledge scores, but this improve knowledge did not lead to appropriate attitudes practices. The main aim of this study was to assess the impact of pharmacist provided patient counselling on treatment outcomes and quality of life in hypertensive and diabetes mellitus type-II patients, improving their knowledge, attitude and practice. This study was undertaken to assess the role of patient counselling in self management of blood sugar and blood pressure levels by patients with coexisting diabetes and hypertension. This study was designed to increase the awareness among patients and other Healthcare professionals about the importance of patient counselling.

This study should focus on the knowledge, attitude, practice and quality of life in patients with both diabetes and hypertension to assess the impact of patient counselling

Specific aims of the study include:

1. To provide information to the patients about the advances in the management of diabetes mellitus type-II and hypertension.
2. To assess the patient's knowledge, attitude, practice with respect to the disease.
3. To assess the quality of life and impact of patient counselling on it.

Materials and methods
Study site

The study was conducted in a tertiary care Teaching Hospital. It is 1000 bedded multispecialty Teaching Hospital.

Study period: this study was performed for a span of 6 months from August 2016-January 2017.

Study design

It is a Prospective interventional study. The interventional model included Patient Information leaflet. The investigators provided the counselling with the help of these leaflets after the pre-counseling data were recorded. Patients selected where divided into control and test groups. Patients in the test group were counselled and given information about the management of disease, whereas control group receive the information only at the end of the study. The follow-up was carried out over a period of 6 months in which the KAP and quality of life of the patients was assessed. The scores were evaluated and statistically analysed. A comparative study is made between the control and test groups.

Selection of patients
Inclusion criteria

1. Patients with diabetes mellitus type-II and hypertension.
2. Patients with age group of above 20 years.
3. Out-patients and in-patients are included.

Exclusion criteria

1. Patients with an age group below 20 years.
2. Patients with hepatic disease and patients undergone complicated surgeries.
3. Pregnant women and lactating mothers.

An informed consent has been obtained from all the patients involved in this study. The study has been approved by the Institutional Ethics Committee IEC/DOPV/2016/34. The questionnaire has been validated and a Cron Balch α-score of 0.87 is obtained.

Statistical Analysis

T test was used to analyse the data and significance was found out by comparing the calculating t value with

tabulated t value at 95% confidence interval (p=0.005). pvalue <0.001 was considered to be significant.

RESULTS

Using inclusion and exclusion criteria a total of 55 patients were enrolled in this study and were randomized to control and test groups. Of the 55 enrolled 47 patients (23 control and 24 test) who completed all follow-up visits were included in analysis. The Other 8 patients withdrew from the study for unknown reasons. Out of 47 patients included in this study 19 (40.43%) were female and 28 (59.57) were male.

Inclusion criteria was suitable for male patients than female patients and hence males exceeded females in the study. In the study the number of patients between the age group of 51 to 60 years where found to be more whereas patients with and age between 71 to 80 and 30 to 40 years were found to be less.

KAP study

KAP questionnaire contains a total of 25 questions of which 18 are knowledge questions and 7 are attitude/practice questions

Table 1 shows that patients improved their knowledge about causes and symptoms of diabetes. Complications with diabetes. Risk of high blood pressure in Diabetic patients. Lifestyle modifications required for management of diabetes and hypertension. Table 2 shows that patients improved their practice by periodically checking their blood pressure and blood sugar levels. Changing Lifestyle modifications (well planned diet, exercise). Table 3 shows the values of physical component summary (PCS) which was assessed by SF-12 questionnaire. Table 4 shows the values of mental component summary(MCS) which was assessed by SF-12 questionnaire. Table 5 shows the values of systolic blood pressure levels pre and post counselling in both control and test arm. Table 6 shows the values of diastolic blood pressure levels pre and post counselling in both control and test arm. Table 7 shows the values of random blood sugar levels pre and post counselling in both control and test arm. Table 8 shows the values of fasting blood sugar levels pre and post counselling in both control and test arm.

Statistical analysis

Table 9 and table 10 shows the statistical data of control and test arm respectively student T test was used to analyse the data and significance was found out by comparing the calculating t value with tabulated t value at 95% confidence interval(p=0.005). pvalue <0.001 was considered to be significant.

DISCUSSION

Our study evaluated the impact of pharmacist-provided counselling in terms of diabetic patients with hypertension understanding of their disease, drug therapy and Lifestyle changes i.e. disease management (blood sugar and blood pressure levels) and quality of life.

Inclusion criteria was suitable for male patients than female patients and hence males exceeded females in the study. In the study the number of patients between the age group of 51 to 60 years where found to be more whereas patients with and age between 71 to 80 and 30 to 40 years were found to be less.

A KAP questionnaire with 18 knowledge questions and 7 attitude/practice questions was used to analyse the patient's knowledge, attitude and practice.

The knowledge attitude and practice of the patients was assessed, where significant difference was observed between the pre counselling and post counselling mean knowledge scores of test group. Significant difference was not found in case of control group mean scores.

The patients improved their knowledge about:

1. Causes and symptoms of diabetes.
2. Complications with diabetes.
3. Risk of high blood pressure in Diabetic patients.
4. Lifestyle modifications required for management of diabetes and hypertension.

The attitude and practice mean scores before counselling and after counselling for test group were significantly different whereas control group scores were not significantly different.

The patients improved their practice by:

1. Periodically checking their blood pressure and blood sugar levels.
2. Changing Lifestyle modifications(well planned diet, exercise)

This shows that patient counselling had impact on the knowledge, attitude and practice of patients and thus effective disease management.

The quality of life in Diabetic patients with hypertension was assessed using short form-12(SF-12) where the Physical Component Summary (PCS) and Mental Component Summary (MCS) were assessed separately.

The mean PCS scores before counselling and after counselling for test group where found to be significantly different when compared to control group which are not significant.

No significant difference was observed between the mean MCS scores of Pre counselling and post counselling test and control groups.

Table 1: Effect of patient counselling on knowledge outcomes

Group	Pre counselling	Post counselling
Control(23)	9.762±0.32	10.10±0.217
Test(24)	8.7±0.317	11.95±0.5355

Table 2: Effect of patient counselling on attitude and practice outcomes

Group	Pre counselling	Post counselling
Control(23)	3.571±0.2809	3.810±0.2026
Test(24)	3.2±0.22	5.1±0.1433

Table 3: Effect of patient counselling on physical component summary

Group	Pre counselling	Post counselling
Control(23)	42.48±2.136	44.77±1.342
Test(24)	44.19±1.342	49.71±0.622

Table 4: Effect of patient counselling on mental component summary

Group	Pre counselling	Post counselling
Control(23)	46.68±1.125	46.33±0.910
Test(24)	47.78±1.761	48.55±1.168

Table 5: Effect of patient counselling on blood pressure levels (systolic)

Group	Pre counselling (mm/Hg)	Post counselling (mm/Hg)
Control(23)	150.8±3.1	146.0±2.34
Test(24)	145.8±2.32	140.8±1.92

Table 6: Effect of patient counselling on blood pressure levels (diastolic)

Group	Pre counselling (mm/Hg)	Post counselling (mm/Hg)
Control(21)	99.11±7.2	94.7±8.51
Test(20)	105.4±4.20	99.5±7.4

Table 7: Effect of patient counselling on blood sugar levels (RBS)

Group	Pre counselling (mg/dl)	Post counselling (mg/dl)
Control(21)	174.4±6.5	172.8±5.2
Test(20)	195.9±7.6	170±7.5

Table 8: Effect of patient counselling on blood sugar levels (FBS)

Group	Pre counselling (mg/dl)	Post counselling (mg/dl)
Control(21)	140.6±1.93	137±1.021
Test(20)	175.3±5.3	161.6±4.8

Table 9: Statistical data of control group			
Control	**t value**	**P value**	**significance**
Knowledge	0.8565	0.1984	Not significant
Attitude and practice	0.6875	0.2479	Not significant
Physical component summary	0.9070	0.1849	Not significant
Mental component summary	0.2403	0.4057	Not significant
Systolic blood pressure	0.8836	0.3817	Not significant
Diastolic blood pressure	1.894	0.0648	Not significant
Blood sugar levels	0.9218	0.3616	Not significant

Table 10: Statistical data of Test group			
Control	**t value**	**P value**	**significance**
Knowledge	5.223	<0.0001	Significant
Attitude and practice	7	<0.0001	Significant
Physical component summary	3.731	0.0003	Significant
Mental component summary	0.3644	0.3588	Significant
Systolic blood pressure	8.134	<0.0001	Significant
Diastolic blood pressure	3.397	0.0014	Significant
Blood sugar levels	11.883	<0.0001	Significant

*Significance was found out by comparing the calculating t value with tabulated t value at 95% confidence interval($p=0.005$).
*pvalue <0.001 was considered to be significant.

From the statistical analysis it was found that patient counselling had improved quality of life with respect to Physical component summary. The MCS was not affected by patient counselling.

Mean scores of systolic, diastolic blood pressure and blood sugar levels before counselling and after counselling for test groups were found to be significantly different.

Means scores of systolic, diastolic blood pressure and blood sugar levels before counselling and after counselling for control group where not significantly different.

This implies that the improvement in knowledge, attitude and practice decreased the blood pressure and blood glucose levels which ultimately improved quality of life (PCS).

Our study has limitations with respect to attitude and practice scores as these were assessed based on patient interview instead of observing the patient's actual practice for disease management.

Our sample size is small and confounding factors like patient counselling and knowledge attained by other sources was not considered.

CONCLUSION

Health related quality of life is increasingly viewed as an therapeutic outcome and is gradually gaining the same level of importance as clinical or physiological outcome parameters.(e.g.: blood pressure, blood sugar levels)

this study aim to assess impact of pharmacist provided patient education on treatment outcomes, KAP and QOL of patients with coexisting diabetes and hypertension. At baseline all patients had poor knowledge and attitude towards their disease and thus poor QOL (PCS, MCS). At the end of the study patients of test group received extensive counselling regarding the disease and its management showed greater improvement in treatment outcomes, KAP and QOL than in patients in control group.

Our study confirms that improvement in knowledge of the disease and its management had positive impact on treatment outcomes and quality of life. At the same time it is noticed that counselling had no effect on mental component summary of the patient's quality of life. This study thus emphasis the impact of patient counselling on KAP and QOL in patient with diabetes and hypertension.

CONFLICT OF INTEEREST

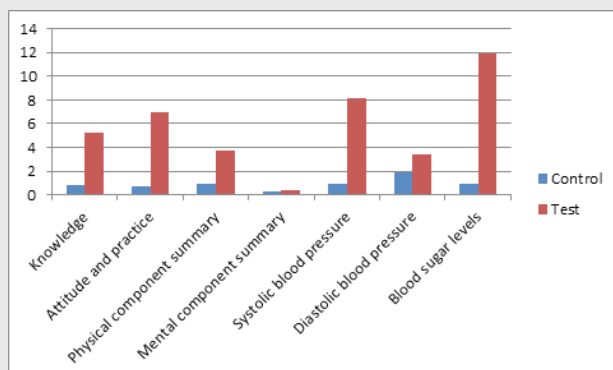The authors declare that there are no Conflicts of Interests.

ABBREVIATIONS USED

KAP: Knowledge, Attitude and Practices; **QOL:** Quality of Life; **PCS:** Physical Component Scoring; **MCS:** Mental Component Scoring.

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PICTORIAL ABSTRACT

SUMMARY

The main aim of this study was to assess the impact of pharmacist provided patient counselling on treatment outcomes and quality of life (QOL) in hypertensive and diabetes mellitus type-II patients, improving their knowledge, attitude and practice. Methods and Material: It is a Prospective interventional study. Patients selected were divided into control and test groups. Patients in the test group were counselled and given information about the management of disease, whereas control group received the information only at the end of the study. The follow-up was carried out over a period of 6 months in which the KAP and quality of life of the patients was assessed. The scores were evaluated and statistically analysed. It was found that patient counselling had improved quality of life with respect to Physical component summary. The MCS was not affected by patient counselling. Mean scores of systolic, diastolic blood pressure and blood sugar levels before and after counselling for test groups were found to be significantly different. Our study confirms that improvement in knowledge of the disease and its management had positive impact on treatment outcomes and quality of life. It is noticed that counselling had no effect on mental component summary of the patient's quality of life.

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