Assessment of the use of pictograms for improving the health outcomes in geriatric in-patients with diabetes and hypertension

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Keywords: Diabetes; Geriatric; Hypertension; KAP; Patient counseling; Pictograms.

ABSTRACT

Diabetes and Hypertension (HTN) are the major contributing factors to the increasing burden of cardiovascular diseases (CVD), which is the leading cause of death in the elderly. Proper medication use and lifestyle modifications help in the prevention of disease progression and complications. A prospective interventional comparative study was carried out for 6 months to assess the use of pictograms as a patient counselling tool to convey information regarding medication use and lifestyle changes to geriatric in-patients with diabetes and hypertension. The secondary objectives were to assess the socio-demographic factors and to assess the knowledge of the patients regarding their medications. 120 patients were enrolled in the study on the basis of inclusion and exclusion criteria and were allocated into intervention and control groups using simple random sampling method. The patients in intervention group were counselled using pictograms accompanied with plain language and verbal counselling was used for the control group. The knowledge of patients' regarding their prescribed anti-diabetic and antihypertensive medications were assessed pre-counselling and post counselling using Knowledge Attitude Practice (KAP) Questionnaire. The data obtained was subjected to statistical analysis. Out of the total study population, 55% were males and 45% were females. The mean age was found to be 70.95±6.52 years. The pre-counselling KAP scores was found to be generally poor. Post counseling, the mean KAP score increased to 12.83±2.06 in the intervention group and to 10.92±1.82 in the control group. It was also found that the post counselling KAP scores in the intervention group had no correlation with age, sex, literacy level and socio-economic status of the patients. The results obtained from our study show that counselling using pictograms generated better outcomes and that pictograms can be used as an effective patient counselling tool.

INTRODUCTION

The geriatric population i.e. the elderly population, usually includes people aged 65 and over.1 Recent estimates have predicted that people aged 65 and above will constitute 16 percent of the world's population by 2050.2 Globally, cardiovascular disease (CVD) is the main cause of death.3 The contributing factors to growing burden of CVD are the increasing prevalence of diabetes and HTN.4 In old age (greater than or equal to 60-65), diabetes is becoming an alarming public health burden as for some authors one from two old persons are diabetic or prediabetic.5 HTN occurs in more than two thirds of individuals after the age of 65.6 In the elderly age-group, usually many medications are prescribed for the management of chronic diseases like diabetes and HTN.7 Knowledge, attitude and practice pertaining to the use of medications have an effect ultimately on the success of the treatment.8 'Knowledge' includes awareness regarding the medication name, indication, frequency, side-effects and special instructions. Inadequate knowledge regarding medications is likely to influence its use.7 Furthermore, many studies have shown that implementing lifestyle modifications and controlling modifiable risk factors helps in decreasing the risk and development of further complications in diabetic and hypertensive patients.9,10

Patient counselling is an important part of the pharmaceutical care process and is useful in improving the knowledge, attitude and practice of the patients towards their disease management.11,12 Counselling patients regarding the lifestyle modifications is very important in the management of diseases like diabetes and hypertension.13 It further promotes interaction between the pharmacist and the patient which in turn helps in improving the health outcomes.11 There are several barriers which have to be overcome so as to convey the intended counselling messages.14 The elderly population is at high risk of not being able to understand their prescription instructions and also verbal and written medication information are poorly comprehended by elderly owing to limited health literacy.15

Pictograms are easy, understandable graphic symbols which are able to convey the information to all, regardless of being illiterate, elderly, or visually impaired. Pictograms help in comprehension of the intended information by overcoming barriers such as low levels of literacy and communication barriers such as linguistic differences, limited linguistic ability, etc. They serve as instant reminders of messages and also as a supplement to verbal and textual instructions and can be used to relay important basic information regarding medications such as its use, dose, route of administration, frequency, precautions

and special instructions.16,17 Some researchers have regarded the elderly patient population as an ideal population for incorporating the use pictograms.18 Many studies pertaining to the use of pictograms have concluded in support of its use.16 Thus pictograms have been used in this study. The purpose of this study is to assess the use of pictograms as a means of health communication to convey information regarding medication use and lifestyle changes to geriatric in-patients with diabetes and hypertension.

MATERIALS AND METHODS

This study was a prospective interventional comparative study approved (IEC/TOMCHRC/ 045/ 15-16) by the Institutional Ethics Committee of The Oxford Medical College Hospital and Research centre, Attibele, Bangalore. A total of 120 patients, who were diagnosed with diabetes and HTN in the department of General Medicine during a period 6 months (December 2016-May 2017) were selected. Patient consent was obtained and all the necessary and relevant data were collected from the medical records of patients using a standard case report form. Patients were interviewed using a KAP questionnaire (Table 1) which was pre-designed and consisted of 15 questions. The scores were obtained and the patients were counselled regarding their prescribed antihypertensive and anti-diabetic medications and lifestyle changes using pictograms-based counselling in intervention group (Figures 1a, 1b, 2a, 2b) and verbal counselling in control group. Post counselling, the KAP questionnaire was again given to the patients and the scores were obtained. All Patients of 65 years and above who were diagnosed with diabetes and HTN were included for the study. Patients below 65 years of age, patients who were totally blind and patients who were profoundly deaf were excluded according to exclusion criteria. The mean and standard deviation of the study population were calculated. All the cases were categorized based on their sociodemographic factors. The Statistical softwares namely SAS 9.2, SPSS 15.0, Stata 10.1, MedCalc 9.0.1, Systat 12.0 and R environment ver.2.11.1 were used for the analysis of the data. 'P value' less than 0.05 was considered to be statistically significant. Microsoft word and Excel have been used to generate graphs, tables etc. ANOVA, Student t test and Chi square/ Fisher Exact test were used in our study.

RESULTS

One hundred and twenty patients were enrolled in the study and were allocated into intervention and control groups. Each group consisted of 60 patients. Both the groups received counselling regarding prescribed anti-diabetic and antihypertensive medications and lifestyle modifications. Intervention group were counselled using pictograms accompanied by plain text and control group received verbal counselling. The study was analysed using descriptive analysis.

CONCLUSION

In our prospective interventional comparative study, we reached to a conclusion that after counselling using pictograms there was statistically significant improvement in patients' knowledge regarding medication instructions. Most of the patients being poor and illiterate were unaware about anti-diabetic and antihypertensive drugs. Most of the illiterate patients above 65 years of age show the need of patient counselling and education using pictograms. The patients unaware about the knowledge of medicines had a better improvement after they were educated about their medications and preventive measures using pictograms. With the help of pictograms patients can improve their knowledge and memory. Counselling using pictograms will help the geriatric population to improve their quality of life. This study concluded that pictograms play a vital role in educating patients and can be used as an effective counselling aid, especially in low literacy elderly groups, moreover comprehension and recall of information can be improved by using simple plain text along with the pictograms while counselling the patients.