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Antihypertensive Treatment: Impact of Multimodal Interventions on Medication Non-Adherence

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ABSTRACT

A research study entitled "Antihypertensive treatment: impact of multi-modal interventions on medication non-adherence" was carried out at Manipal University, Manipal by Ms Melita Sheilini for the award of PhD Nursing degree.

The study was carried out in two phases. The primary objective of the first phase of the study was to find out the proportion of nonadherents to anti-hypertensives and, the second phase aimed to find out the impact of multi-modal interventions on adherence, Quality of Life (QOL), knowledge on hypertension (HTN), self-efficacy and clinical outcome among the subjects in experimental and control group at baseline, three and six months.

The conceptual framework for the study was based on the Mary Jayne & Johnson's Medication Adherence Model (2002).

Cross-sectional survey design was used for conducting the phase I as it aimed at finding out the proportion of non-adherents to anti-hypertensives and experimental design using Randomized Controlled Trial was adopted for phase II since, the study sought to evaluate the impact of multi-modal interventions on adherence, QOL, knowledge on HTN, self-efficacy and clinical outcome among the elderly hypertensives. The experimental group received the multimodal interventions developed during phase 1 and the control group received the routine care. Both the groups were followed up at baseline, three and six months.

The tools used for data collection were Tool 1 - Background information with Part A: Demographic proforma, Part B: Clinical proforma and Part C: Scale on life style practices; Tool 2 - Scale on factors influencing adherence; Tool 3 - Structured knowledge questionnaire on Hypertension; Tool 4 - Revised Medication Adherence Self-Efficacy Scale (MASES-R); Tool 5 - Morisky Medication Adherence Scale (MMAS-8); Tool 6 -

Scale on perceived family support; and Tool 7 - WHOQOL-BREF scale and Sphygmomanometer. To ensure the content validity, the tools 1,2,3 and 6 were given to nine experts from the field of medicine and nursing. Tools 4, 5 and 7 were standardised scales with the established reliability in Indian setting for Tool 5 and 7. The reliability of Tool 4 was tested in the present study among the Indian population. English as well as the Kannada version of the Tool 5 and 7 were obtained from the authors with the due norms. Permission to use the English version of Tool 4 was also obtained from the author along with the permission for translating it into Kannada. All the tools were pretested and the reliability was established for the tools 2, 3, 4 and 6. The pilot study was conducted, which revealed the feasibility of the study.

Administrative permission was obtained for the study. Ethical clearance was obtained (IEC no. KH IEC 253/2012) from the Institutional Ethical Committee of MU, Manipal. The Clinical Trials Registry-India (CTRI) registration number obtained is CTRI/2017/04/008405. Informed consent was obtained from participants after explaining about the purpose and usefulness of the study and assuring confidentiality of information.

The data were collected from 800 patients of age 60 years and above who were able to manage taking medications and able to read, write, and converse in English/Kannada. The data for the first phase main study was collected from July 2013 to July 2015. The data collection for the second phase started from December 2015 and the sample were followed up twice i.e. at three months and six months after the initial interaction.

The data gathered were coded and analysed using SPSS version 16.0. Descriptive and inferential statistics were used for data analysis.

The phase I analysis revealed that the majority i.e. 74.6% were between the age group of $\geq$ 60-70 years, where 52.1% were males. The majority i.e. 65.3% had insurance facility.

The majority i.e. 72.4% were on treatment for hypertension since >1 year, the majority i.e. 53.3% had associated Diabetes Mellitus and most 25.62% were on calcium antagonists for hypertension. About 36 (4.5%) were on diuretics as a combination drug along with other anti-hypertensives.

Out of 800 participants, 475 (59.4%) were following the lifestyle practices required for the control of blood pressure.

Self-efficacy and knowledge on HTN were found to be having the significant influence on medication adherence among elderly hypertensives.

Out of the 800 elderly hypertensives being surveyed, 309 (38.6 %) were non-adherent to the antihypertensive medications and 38.6% expressed forgetfulness as a major factor leading to their non-adherence to anti-hypertensives.

Adherence level among hypertensives with comorbidities (40.25%) was better compared to the adherence level among hypertensives without comorbidities (21.12%).

The results of the phase II proved that the nurse led multi-modal interventions lead to an improvement in medication adherence [F $(1.75,214.30)$= 774.18, p<.001], knowledge on hypertension [F $(2,244)$= 43.83, p<.001] and self-efficacy [F $(1,122)$=3.99,p=.04] of elderly on anti-hypertensives over a period of six months.

The results of the present study also showed that, the multimodal interventions did not show statistically significant improvement in the overall Quality of life, but significant between group effects were observed in Psychological domain-QOL and Social relationships domain-QOL(p<.001).

There was no statistically significant reductions in the SBP and DBP scores (p>0.05) among the experimental group over a period of six months.

But, the findings of the present study demonstrated clinical significance of the multimodal interventions in the area of improvement in Medication adherence, Quality of Life, Knowledge on hypertension, Self-Efficacy and reduction in SBP & DBP scores.