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**A study to assess the knowledge of type II diabetes mellitus patients on diabetic neuropathy and to identify the people at risk for the development of upper extremity diabetic neuropathy among type II diabetes mellitus patients with a view to develop an information pamphlet in a selected hospital of Udupi district, Karnataka.**

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## "ABSTRACT

A study to assess the knowledge on diabetic neuropathy and to identify the people at risk for the development of upper extremity neuropathy among diabetes mellitus patients with a view to develop an information pamphlet in a selected hospital of Udupi district, Karnataka" was carried out at Kasturba Hospital, Manipal by Ms Clarita Shynal Martis for the award of MSc Nursing Degree.

The objectives of the study were to assess the knowledge of type II diabetes mellitus patients on diabetic neuropathy and to identify the people at risk of development of upper extremity diabetic neuropathy among the type II diabetes mellitus patients of Kasturba Hospital, Manipal.

The conceptual framework was based on Irwin Rosen Stocks Health Belief Model 1950. The research approach was a quantitative research approach and descriptive survey research design was used. Purposive sampling was used to assess the knowledge on diabetic neuropathy and to identify the people at risk of developing upper limb diabetic neuropathy.

The tools used for the data collection were, Tool 1: demographic profoma, Tool 2: knowledge questionnaire on diabetic neuropathy, Tool 3: Manual assessment of muscle strength as per MRC grading, Tool 4: Measurement of palmar temperature by infrared medical thermometer, Tool 5: measurement of hand grip strength by hand grip dynamometer, Tool 6: measurement of pinch grip by pinch meter.

The content validity of the tools was established for the six tools to seven experts and modifications were done based on their suggestions. All tools were pre tested and reliability was established for the tools. The reliability of the knowledge questionnaire was established by using split half method. Both the tools were reliable.

## Abstract

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Calibration of the medical infrared thermometer, hand grip dynamometer and pinch meter was done and the instruments were found reliable.

Administrative permission was obtained from the Dean, MCON, Manipal, institutional Research Committee, MCON, Manipal, permission from the Medical Superintendent of Kasturba Hospital, Manipal and Institutional Ethics Committee clearance was also sought (IEC No: 840/2017). Informed consent was taken by the

participants. Data was collected from 2nd January 2018 to 28th of February 2018. Structured knowledge questionnaire was administered to the participants who were willing to take part in the study. The study sample comprised of 100 type II diabetes mellitus patients.

The data was coded and analyzed using SPSS version 16.0. Descriptive statistics was used for the data analysis.

Majority 63 (63%) of the participants belonged to the age group of 61-70 years.

There were equal number of men and women in the study. Majority 75(75%) of the participants never performed regular exercises and 80 (80%) were on OHA. Majority 70(70%) of the participants did not have lower limb neuropathy and majority and majority 67(67%) were having diabetes mellitus for 5-10 years. Majority 77(77%) never consumed alcohol and 79 (79%) never smoked.

Majority of the participants 78(78%) had average knowledge on diabetic neuropathy.

The mean scores for deltoid and biceps muscle for males and females were 5.

The mean score of triceps muscle for males and females are 4.99 and 5 and the mean score of wrist muscle for males and females are 4.92 and 4.94. The mean score of grip muscle for males and females was 4.94 and 4.85. The hand grip strength of males and

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females are 25.63kgs and 18.04kgs. The mean pinch strength of thumb for males and females was 3.28kgs and 2.82kgs. The mean pinch grip of index finger for males and females was 5.32kgs and 3.95kgs and the mean pinch grip for middle finger of males and females was 5.11kgs and 3.74kgs

None of the participants had strength of deltoid, biceps and triceps muscle lower than the mean. 7 participants had grip strength lower than the mean and 10% of the participants had wrist muscle score lower than the mean. Palmar temperature was lower than the mean in 40% of the participants and 59% of them had grip strength lower than the mean. Among 41 subjects, the thumb pinch was lesser than mean and 61% had index pinch grip lower than the mean. Middle finger pinch was lesser than mean in 62% of the subjects.

The study showed that 49% of the participants had moderate risk of developing

upper extremity diabetic neuropathy, 45% of them had mid risk of developing upper extremity diabetic neuropathy and 7% of the participants had severe risk of development of upper extremity diabetic neuropathy.

Thus the study recommends that knowledge of diabetic patients on diabetic neuropathy is essential in the prevention of diabetic upper limb neuropathy and its complications. Further studies to be done to find out the normative values of hand grip and pinch grip strength"