ORIGINAL RESEARCH

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# The study to assess the relationship between handgrip strength upper limb, anthropometric characteristic and hand disability in adult with type 2 diabetes melllitus

Tamilselvi S[1*], Priyadharshini S[2]

[1]Department of Community Health Nursing, SIMATS, Thandalam

[2]Saveetha College of Nursing, SIMATS, Thandalam

Corresponding Author:
tamildani@gmail.com

## ABSTRACT

**AIM:** the present study aims to assess the relationship between handgrip strength upper limb, anthropometric characteristic and hand disability in adult with type 2 Diabetes Mellitus at SMCH. **METHODS AND MATERIALS**: A cross sectional research design was used for the present study. A total 50 samples were collected using convenience sampling technique. The demographic variable, handgrip and hand disability was assessed using structured questioner, followed by that data was gathered and analyzed . **RESULTS**: the results the study revealed that there is a significant association between hand grip and hand disability at the level of p<0.01 **conclusion**: Thus, the present despites that factors associated with handgrip and hand disability.

## KEYWORDS

hand grip, hand disability, type 2 diabetes.

## Imprint

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## INTRODUCTION

**According to WHO**, Diabetes is a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces. Insulin is a hormone that regulates blood sugar. In 2014, 8.5% of adults aged 18 years and older had diabetes. In 2016, diabetes used to be the direct purpose of 1.6 million deaths and in 2012 excessive blood glucose used to be the cause of each different 2.2 million deaths.

Between 2000 and 2016, there used to be as soon as a 5% make bigger in untimely mortality from diabetes. In high-income international locations the premature mortality rate due to diabetes reduced from 2000 to 2010 then again then accelerated in 2010-2016. In lowermiddle-income countries, the premature mortality cost due to diabetes prolonged across every periods. By contrast, the probability of death from any one of the 4 most important non communicable ailments (cardiovascular diseases, cancer, persistent respiratory diseases or diabetes) between the a while of 30 and 70 diminished with the aid of 18% globally between 2000 and 2016 .Diabetes mellitus (DM) is a metabolic ailment regarded as by the hyperglycemia with the turbulences of the carbohydrate, fat and the protein metabolism that reasons deficiencies in insulin secretion, insulin action, or both. Insulin, the hormone formed by the beta cells of the pancreas is quintessential to make use of the glucose from the food disbursed as an electrical energy source. DM is a globally huge and a existence horrifying metabolic fitness trouble and which is classified into three major training especially type1, range two and gestational diabetes mellitus.

## Material and methods

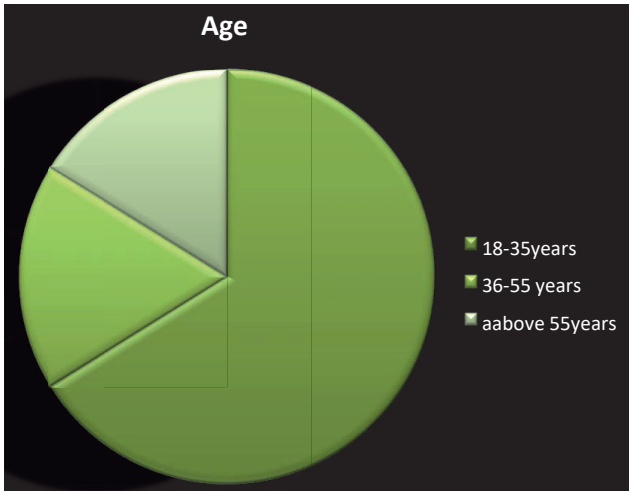
After obtaining and ethical clearance from the institutional ethical committee of saveetha institute of medical and technical science and formal permission letter obtained from the head of the study sector, present study was conducted. For the present study quantitative approach with descriptive research design was adopted. The data were collected using a non probability purposive sampling technique .The inclusion criteria for the study, participants, who are available during the study period and who are cooperative and who understand both Tamil and English. exclusion criteria for the study are, samples who not willing to participate in the study .The purpose of the study was explained by the investigator to each of the study participants and a written informed consent was obtained from them . the demographic and the factors associated with infertility data was collected from the samples

using semi structured questionnaire by face to face interview .the data were analyzed by biostatistics. The sample characteristics were described using frequency and percentage, . Chi- square was used to associate the level of experience with their selected demographic variables

## RESULTS AND DISCUSSION

### **SECTION A:** Description of the demographic variables of adults with type 2 diabetes mellitus

The table despites that maximum of the m are adults and 46.0% were females, about 36.0% were widow about 38% were government employees, 36.0% were had education up to diploma /graduate, 32.0% were hindu, 32.0 % were in extended family, 58.0% were falling on monthly income of 15,000, about 46.0% were non vegetarian, 56.0% were on sedentary life style, 48.0% were left hand dominace, 58.0% were of moderate hand grip, about 42.0 % were under liraglutide medication




Frequency and percentage Distribution of age

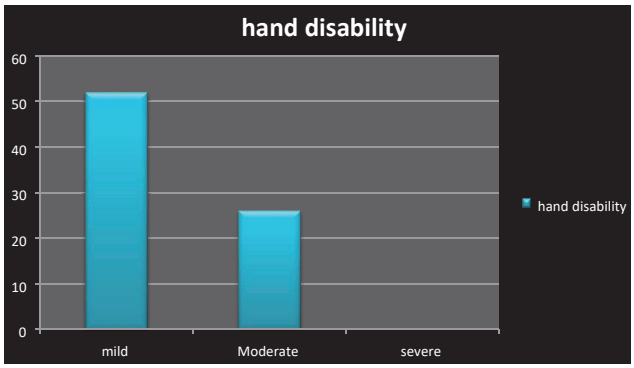
### **SECTION B:** Assessment of level of hand grip and hand disability

This table shows that maximum of were in mild hand disability that is 52%, and 26% were of moderate hand disability, 22% were of severe hand disability

Table 2

frequency and percentage distribution of hand disability

| Variables | Mild | | Moderate | | Severe | |
|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % |
| Level of hand disability | 26 | 52.0 | 13 | 26.0 | 11 | 22 |




Percentage distribution on level of hand disability

### **SECTION C:** comparison of age, upper limb anthropometric characteristics, hand functional status, dominant and non dominant hand grip strength between male and female participants

Participant were only comparable with age, LWrC (cm), FBS ($mmol^{-1}$), HFS and HGS-D (Kgf) at level of $p<0.001^{**}$

### **SECTION D**: correlation between dominant and non dominant hand grip strength and upper limb anthropometric characteristics of participants

Majority of the anthropometric characteristics shows significant association with dominant and non dominant hand grip

### **SECTION E:** logistic regression analysis of association between hand disability, age, socio demographic characteristics with poor hand grip strength

Only age variable sshows significant relationshio with poor hand grip at $p<0.001^{**}$

## CONCLUSION

From the results of the present study shows significant improvement for researcher .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