

# Effectiveness of Telenursing on Diabetic Patients with Glucose Self-Monitoring Among General Population at Arakkonam Gh

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## Abstract

One of the most prevalent incapacitating diseases in the elderly is diabetes, which necessitates acceptable blood sugar control to avoid complications. It has been suggested that telenursing is a practical way to control blood sugar levels. The present study aims to assess the effect on telenursing on self-glucose control among clients with type 2 diabetes mellitus at Saveetha medical college and hospital. A quantitative research design was used for the present study. A total 100 samples were collected using quota sampling technique. The demographic variable pretest and posttest level of complaints on self-glucose monitoring was assessed using structured questionnaire, telenursing on glucose self-monitoring and management was given among diabetes mellitus followed by that data was gathered and analyzed. The results the study revealed.

**Key words:** Self glucose Telenursing, Diabetes mellitus

## 1. Introduction

Chronic hyperglycemia caused by deficiencies in insulin secretion, which affects protein, carbohydrate, and lipid metabolism, is a hallmark of the metabolic disorder diabetes mellitus. This condition has a significant negative influence on the patient's other organs and may shorten their life expectancy. Without changing from the previous ten decades, diabetes is a significant and expanding concern in all age groups. [2] The majority of endocrine diseases are caused by this one, which affects more than 140 million individuals worldwide. Diabetes prevalence is rising proportionally to lifestyle changes in all nations, but especially in emerging nations, making it the biggest challenge facing health care in the twenty-first century. [3] It is anticipated that until 2030, over 366 million individuals in the world will be suffering from this disease without any improvement. [4] In Iran, based on the known information, more than 2 million people suffer from diabetes and its accompanying problems. [5] Growing ageing trends, technological advancements, demographic shifts, lifestyle changes, and a lack of physical activity are the main factors that have made diabetes a concern on a global scale. [6] Programs to educate the public about diabetes use a variety of techniques, while some pandemic-related health education initiatives may be halted. [7] One of the most effective techniques, which has a significant impact on patients who are far away, permits ongoing care during any epidemic, where the caregiver gives Today, nurses use telenursing for all nursing procedures, such as assessment, planning,

intervention, and evaluation. This helps to further develop the therapeutic relationship between the nurse and the patient they are caring for. [9] In order to overcome the challenges of time and distance and provide better nursing care, telenursing encompasses all forms of nursing care and services that can be provided to patients who are located at a distance. It also includes a wide range of communication technologies, including the phone, internet video clips, and email. [10] Diabetes mellitus (DM) is a metabolic disorder characterised by hyperglycemia and disruptions in the metabolism of carbohydrates, fats, and proteins that result in deficits in insulin secretion, activity, or both. It is vital to utilize insulin, a hormone produced by beta cells in the pancreas. [11] Diabetes self-care practices are actions made by those who have the disease or are at risk of getting it to successfully manage it on their own. Diabetes self-care management is challenging. [11] Diabetes self-care practices are actions made by those who have the condition or are at risk for developing it to effectively manage it on their own. Diabetes self-care management is difficult. [12] Gestational diabetes mellitus is defined as variable degrees of glucose intolerance that begins during pregnancy and may have an impact on both the mother and the unborn child. [13] Patients with diabetes have demands that extend beyond just maintaining good glucose control and include preventing complications, limiting their impairment, and receiving rehabilitation. [14] Similar to telemedicine, telenursing is defined as providing nursing services through a digital platform. This entails using a Smartphone for telenursing. [15] Telenursing may be a way to provide more high-

quality care while also facilitating more access to nursing services. Nurses can provide monitoring, instruction, follow-up, remote statistics collection and interventions, pain management, own family support, and multidisciplinary care in a whole new way with telenursing. [16] The present treatment for diabetes mellitus must address the crucial issue of self-monitoring of blood glucose (SMBG). SMBG has been recommended for people with diabetes and their health care providers because it enables you to achieve a specific level of glycemic control and prevents hypoglycemia. [17] is a method whereby individuals with diabetes check their own blood sugar levels (glycemia) using a glycemic reader (glucose meter). They can change or assess the effectiveness of their treatment based on the reading (diet, exercise, insulin, antidiabetics, and stress management). [18] For all diabetics, self-monitoring of blood glucose (SMBG) is a crucial component of treatment. It offers quick feedback and information that enables people with diabetes to evaluate how their dietary decisions, level of exercise, and drug regimens affect their ability to control blood glucose levels. [19] One of the most common non-communicable diseases in India is diabetes mellitus. Diabetes patients' physical, emotional, and social well-being are all impacted by the acute and ongoing consequences, which puts a significant strain on the health care system. Research has shown that adequate self-care. [20] Diabetes self-care practises are actions made by those who have the condition or are at risk of developing it to effectively manage it on their own. Diabetes self-care management is difficult. It takes a multifaceted strategy, and the patient must adhere to specific rules, including healthy nutrition, frequent physical activity, regular blood sugar monitoring, regular medication use, good problem-solving abilities, healthy coping mechanisms, and risk reduction. the best glycemic control possible while avoiding issues in the future.

## 2. Material and Methods

The present study was carried out only after receiving approval from the institutional ethics committee of the Saveetha Institute of Medical and Technical Science and a formal authorization letter from the dean of the Saveetha Medical College and Hospital. Using a quantitative approach and a pretest-posttest research design, the current investigation was conducted. The information was gathered from 100 samples using a quota sampling

**Table 2: Comparison of pretest and posttest grades of complaints and random among clients with diabetes mellitus. N=100**

Variables	Test	Mean	S.D	Paired 't' test Value
Knowledge	Pretest	7.72	2.43	t = 21.547 p = 0.0001 S***
	Post Test	17.85	2.29	

\*\*\*p<0.001, S – Significant

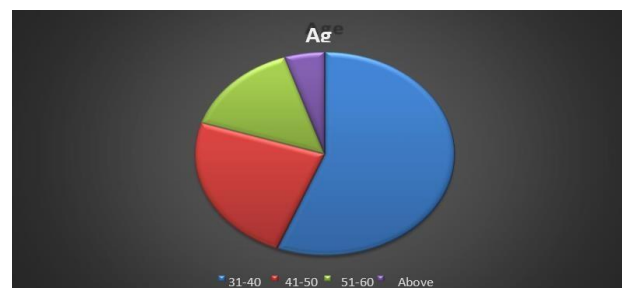
This table shows that there is a significant difference between pre test and post test by intervention with tele nursing.

technique. Participants must meet the study's inclusion requirements, including being cooperative, available during the study time, and understanding both Tamil and English. Samples who are unwilling to engage in the study are excluded from consideration for the study. The investigator gave each study participant a thorough explanation of the study's objectives before obtaining their written informed consent. Using a semi-structured questionnaire, the samples' demographic information and blood glucose level were gathered. Biostatistics was utilised to evaluate the data. Frequency and percentage were used to characterise the sample characteristics. Chi-square was utilised to link the blood glucose level to the demographic factors they had chosen [26].

## 3. Results and Discussion

### Section A

Description of the demographic variables among the clients' diabetes mellitus.



**Figure 1:-Frequency and percentage of the demographic variables among the client's diabetes mellitus**

### Section b

**Table: 1 Assessment of the pretest and posttest level of complaints on self glucose monitoring among the clients in Arakkonam GH**

Knowledge	Grade 1		Grade 2		Grade 3	
	No.	%	No.	%	No.	%
Pretest	12	12.0	36	36.0	52	52.0
Post Test	36	36.0	48	48.0	16	16.0

This table shows that maximum of them were grade 3 complaints in pretest, 36% were on grade 2 complaints, 12% were in grade 1 complaints.

This table also shows that maximum of them were in grade 2 complaints, in post test 16% were grade 3 complaints, 36% were of grade 1 complaints. such as education shows significant association with post test level of compliance.

### Section c

Association of post test level of complaints among

the clients diabetes mellitus and their selected demographic variables

**Table 3: Frequency and percentage distribution of level of compliance among diabetic client with their selected demographic variable.**  
N = 100

Demographic Variables	Grade1		Grade2		Grade3		Chi-Square Value
	No.	%	No.	%	No.	%	
Age (in years)							$\chi^2=2.823$ d.f=3 p = 0.420 N.S
31 – 40	12	12.0	25	25.0	4	4.0	
41 – 50	19	19.0	15	15.0	8	8.0	
51 – 60	12	12.0	6	6.0	2	2.0	
Above 60 years	3	3.0	2	2.0	2	2.0	

Demographic Variables	Grade1		Grade2		Grade3		Chi-Square Value
	No.	%	No.	%	No.	%	
Education							$\chi^2=8.971$ d.f=3 p = 0.030 S*
Primary school	12	12.0	18	18.0	4	4.0	
Higher secondary school	20	20.0	8	8.0	5	5.0	
Above high school	2	2.0	15	15.0	3	3.0	
Illiterate	2	2.0	7	7.0	4	4.0	

\*p<0.05, S – Significant, N.S – Not Significant

This above tables shows , demographic variables such as education shows significant association with post test level of complaints. This table shows that maximum of the were grade 3 complaints in pretest, 36% were on grade 2

complaints, 12% were in grade 1 complaints. This table also shows that maximum of them were in grade 2 complaints, in post test 16% were grade 3 complaints, 36% were of grade 1 complaints. such as education shows significant association with post test level of compliance.

**Table 4: Comparison of pretest and posttest grades of complaints and random among clients with diabetes mellitus. N = 100**

Variables	Test	Mean	S.D	Paired 't' test Value
Knowledge	Pretest	7.72	2.43	t = 21.547 p = 0.0001 S***
	Post Test	17.85	2.29	

\*\*\*p<0.001, S – Significant

This table shows that there is an significant difference between pre test and post test by intervention with tele nursing.

Association of post test level of complaints among the clients diabetes mellitus and their selected demographic variables

Section D

**Table 5: Frequency and percentage distribution of level of compliance among diabetic client with their selected demographic variable.**

Demographic Variables	Grade1		Grade2		Grade3		Chi-Square Value
	No.	%	No.	%	No.	%	
Education							$\chi^2=8.971$ d.f=3 p = 0.030 S*
Primary school	12	12.0	18	18.0	4	4.0	
Higher secondary school	20	20.0	8	8.0	5	5.0	
Above high school	2	2.0	15	15.0	3	3.0	
Illiterate	2	2.0	7	7.0	4	4.0	

\*p<0.05, S – Significant, N.S – Not Significant

This above tables' shows, demographic variables such as education shows significant association with post test level of complaints.

study was to evaluate the impact of telenursing on diabetic patients' concerns about self-monitoring of blood glucose in the general population. According to the study's findings, using the telenursing technique of intervention significantly reduced the number of complaints about self-monitoring of blood sugar levels. Based on the results, it is clear

4. Conclusion

According to the study's findings, the researcher has significantly improved. The purpose of the current

that offering this type of telenursing method will inspire patients with type 2 diabetes mellitus and help them learn how to manage their condition on their own. As a result, telenursing by medical professionals is a helpful way for patients and was crucial for providing high-quality nursing care that helps to meet the patients' needs.

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