

Health Literacy and Compliance with Diabetes Treatment Therapy

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Abstract

Several chronic diseases like diabetes require patient literacy for control of illness and to prevent further adverse effects. Patient literacy is also essential in recognizing behavioral deviations, which is vital for active participation in handling disease and acceptance of the diagnosis. (American Diabetes Association, 2017). National Adult Literacy Survey mentioned a deficiency of appropriate reading skills among 46-51% of citizens of the US (Kirsch, Jungeblut, & Jenkins, 1993).

The physicians also noticed that 35% of the native English patients lack the literacy abilities to comprehend the literature related to their disease (Williams, Parker, & Baker, 1995). The patients do not recognize the symptoms of lower glucose levels as feeling sweaty, hungry, and shaky due to a lack of health literacy, and 62% of the patients are unaware of the treatment for this condition. The problems related to educating patients with inadequate health literacy must be addressed. Patients can be directly involved in developing educational materials, and this step can empower them to improve their health through effective education with the help of the designed content (Rudd & Comings, 1994). This study will evaluate how low health literacy is causing health issues for [diabetic patients](#) and what interventions can be helpful in such patients.

Introduction

The public health liability of chronic diseases is increasing globally and needs to be managed effectively at the universal level. A range of generic tactics has been identified that could be implemented to manage chronic diseases like diabetes (Davis, Wagner, & Groves, 2000). These strategies included education as a first pre-requisite, with a vibrant objective of improving the dynamic contribution of patients to make them partners in the health care practice. This model arose due to the realization of healthcare providers that the patients are customers and producers of healthcare (Holman & Lorig, 2000). So, the model highlights the apparent role of patients and healthcare providers in preventing and controlling chronic diseases. Patients can play This role actively if they are aware of their disease and resourceful enough to question medical findings (Ha & Longnecker, 2010). The concept of patient health literacy and empowerment is used excessively in new medical settings worldwide, as it can help a lot in attaining control of chronic diseases.

The control of chronic diseases is complex, as in the case of diabetes; many treatments and health literacy are required to control the disease. Some treatments are more effective, but without health

education and involvement of the patients, no treatment can produce highly efficient outcomes (Mulrow & Pugh, 1995). So, it can be said that the management of diabetes is interdependent on three main elements:

- Education and provision for self-management (with decreased lifestyle risk issues).
- Effective drug usage strategies for sustaining normal blood glucose, lipid levels, and blood pressure.
- Operative surveillance for prompt detection and management of complications.

Health Literacy and Compliance with Diabetes Treatment Therapy

Health literacy empowers people with diabetes to understand information, make informed decisions, and follow their treatment plans—leading to better health and quality of life.

THE PATHWAY TO BETTER HEALTH



DIABETES: A GLOBAL CONCERN



Diabetes affects millions worldwide and is a leading cause of blindness, kidney failure, heart disease, and lower-limb amputation.



Type 2 diabetes is largely preventable and manageable with timely education and consistent care.

NEEDS OF DIABETIC PATIENTS

- ✓ Clear, simple, and reliable health information
- ✓ Understanding medications and possible side effects
- ✓ Guidance on healthy eating and physical activity
- ✓ Skills to monitor blood glucose and recognize warning signs
- ✓ Emotional support and motivation
- ✓ Accessible and affordable healthcare services

SELF-MANAGEMENT ESSENTIALS

- Monitor**
Check blood glucose as recommended.
- Medicate**
Take medications/insulin as prescribed.
- Eat Smart**
Follow a balanced meal plan and control portions.
- Be Active**
Aim for regular physical activity.
- Stay Connected**
Attend follow-ups and seek support when needed.

BARRIERS TO COMPLIANCE

- 📖 Limited health literacy or poor understanding
- 🧩 Complex treatment regimens
- 🕒 Forgetfulness or busy lifestyle
- 💰 Medication side effects or cost
- 😞 Emotional factors: stress, depression, diabetes burnout
- 🏠 Limited access to care or support

ADHERENCE vs. COMPLIANCE: WHAT'S THE DIFFERENCE?

COMPLIANCE

The extent to which a patient follows the provider's instructions.



More passive; focuses on doing what is told.

VS.

ADHERENCE

The extent to which a patient's behavior matches agreed-upon recommendations.



Collaborative; emphasizes partnership and shared decisions.

HOW TO IMPROVE HEALTH LITERACY & COMPLIANCE

- ✓ Use plain language and avoid medical jargon.
- ✓ Teach using visual aids, demonstrations, and real-life examples.
- ✓ Encourage questions and active participation.
- ✓ Provide written instructions and reminders.
- ✓ Involve family or caregivers in education.
- ✓ Build trust and respect patient preferences.



When patients understand their condition and feel supported, they are more likely to follow their treatment plan—leading to **healthier lives and stronger communities**.



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Health literacy

Health education means the patient can read out and comprehend curative instructions and make proper choices for the best health results (Ramage-Morin, 2009). Health education is quite different from regular education. It consists of the instantaneous capability to read out, to completely comprehend health directions, and to follow instructions regarding medicine and treatment. Nowadays, there is a developing concentration on health education because several people are less aware of it (Zarcadoolas & Pleasant, 2005). There is also an increasing interest in reducing the expenses of adults, culturally different subgroups, and senior citizens of North America facing maximum frequency of less health education (Kickbusch, Pelikan, & Tsouros, 2013).

With time, the responsibility of doctors moved forward from writing prescriptions and treatment-based instructions to the patient; doctors must be able to make sure that patients can empathize with all stages of health education and can, keep a check on their medicines and choose their medicine evenly. Nearly half of North Americans consume at least one suggested medicine, 53% of adults residing in foundations, and 13% inhabiting societies use five or more medicines (Ernst & Grizzle, 2001). For patients at home, it is important to be well aware of curative instructions and the correct medicinal schedules to be followed. Thus, good interaction among doctors and patients is essential for reliable and fruitful results of curative treatment.

Therapeutic instructions and health literacy

Usually, people with less health education have a reading level of fifth grade, but curative instructions are often organized in a way directed to people who can read at a level of tenth grade (Safeer & Keenan, 2005). As recent medicinal instructions are so hard to realize, less health-aware people are in great danger of misunderstanding suggested labeled information, prescribed amount, time, quantity, precautionary measures, written instructions, and the doctor's instructions to the patient (Crouch, Wills, Miller, & Abdehou, 1990). Patients who try to comprehend curative instructions are most likely to be incapable of self-controlling their health and making suitable choices for health. There is a great difference between the levels of ability needed to realize present medicinal instructions and the certain level of realization in patients with less health awareness. Health education is important for people to completely realize, accomplish, and converse their health requirements and retain health quality. Sufficient health awareness can help people self-control their health and follow health instructions in their routine lives (Goodall & Halford, 1991). Health education is linked with health results. Less health awareness is not only shared but also connected with bad health results, greater use of hospital services, increased death rate, a high risk of mistakes in curative treatment, and less compliance regarding treatment (Crouch, Wills, Miller, & Abdehou, 1990).

Furthermore, according to an annual report, a scientific analysis explores that less health awareness results in about 3-5% of healthcare expenditures. A research study organized by Schillinger et al.

(2003) discovered the association between health awareness and its positive effects on patients with type 2 diabetes. After getting a hold over different social attributes, indications of depression, support from family and friends, course of therapy, and long-term diabetes, fewer health awareness records automatically lead to inadequate glycemic management, and the people less literate about health were more likely to fail in controlling glycemic level as compared to those who are sufficiently aware of health education (Schillinger, 2003).

Health Literacy and Patient Awareness

Several chronic diseases like diabetes require patient literacy for control of illness and to prevent further adverse effects. Such patients must be literate enough to understand their medicinal routine and lifestyle management according to their needs. [Diabetic patients](#) have educational requirements to understand the complexities of diabetic nutrition, insulin injection, and monitoring of glucose levels at home. Patient literacy is also important in recognizing the behavioral deviations vital for active participation in handling disease and acceptance of diagnosis. (American Diabetes Association, 2017). Traditional education mainly relies on the written resources of disease management and care instructions for patients; most have extensive information about the disease, cures, and prevention. However, most of the material is of a professional level and is difficult for less-educated patients to understand. So, these efforts could not bring any improvement in patients understanding and attitudes towards the disease. So, patients with inadequate education do not benefit from these efforts, and the patient educational programs remain unsuccessful (Crouch, Wills, Miller, & Abdehou, 1990).

National Adult Literacy Survey mentioned a deficiency of appropriate reading skills among 46-51% of citizens of the US (Kirsch, Jungeblut, & Jenkins, 1993). The physicians also noticed that 35% of the native English patients lack the literacy abilities to comprehend the literature related to their disease (Williams, Parker, & Baker, 1995). Poor health status is also related to literacy skills, and patients need more education due to worse health conditions to self-regulate their health status. The knowledge of chronic illnesses like diabetes is important for patients as it is a prevalent disease requiring daily attention (Goodall & Halford, 1991).

Insufficient knowledge of the indications of hypoglycemia and its management is mentioned to be life-threatening in several cases. The patients do not recognize the symptoms of lower glucose levels as feeling sweaty, hungry, and shaky due to a lack of health literacy, and 62% of the patients are unaware of the treatment for this condition.

Effective knowledge is a crucial aspect of patient literacy programs, and studies have shown that inadequate functional health education was observed among patients who had attended educational programs related to diabetes. They were not aware of the basic information and self-regulatory skills regarding their disease. So, healthcare agencies' major concern is improving patient knowledge to increase compliance with disease therapy. This improved compliance with health care appointments and medications is largely associated with the patient's benefit (Brown, 1990). Adherence to medical

therapy and advice is another important aspect of these educational courses. Some previous studies mentioned that compliance and adherence are associated with improved results among diabetic patients (Kravitz et al., 1993). Research done at Grady Memorial Hospital declared that along with access to complications, ineffective self-care abilities to manage diabetes were one main cause of diabetic ketoacidosis among patients (Musey et al., 1995).

The problems related to educating patients with inadequate health literacy cannot be ignored. The Joint Commission on Accreditation of Health Care Organizations directed that health establishments and hospitals should provide comprehensible education to patients, evaluate patients' knowledge, and certify such educational struggles (Organizations, 1993).

Moreover, *Healthy People 2000* set objectives that 75% of individuals with diabetes should get an education on diabetes (US Dept of Health and Human Services, 1991). Patients' functional health literacy must be deliberated when grasping these objectives. However, no meek process of recognizing low-literate patients subsists, and the substantial shame allied with illiteracy repeatedly makes them conceal their incapacity (Parikh, Parker, & Baker, 1996). Patients can be directly involved in developing educational materials, and this step can empower them to improve their health through effective education with the help of the designed content (Rudd & Comings, 1994). The prospect of patient instruction requires originality and assurance of essential resources to improve health effects for low-literate patients suffering from chronic diseases.

Diabetes

Diabetes Mellitus is a common health condition affecting individuals as well as society. Diabetes affects many communities in the U.S. as well as other parts of the world. Diabetes can be managed; however, the existing treatment options require patient's full engagement in the treatment plan by complying to manage their blood sugar levels. According to the American Diabetes Association report (2014), as of 2012, 29.1 million people, or 9.3% of the American population, had diabetes. Also, according to the report, among the 21.0 million cases, 8.1 million people, equivalent to 27.8 percent of the diabetes cases, were undiagnosed. There are significant associations between diabetes complications and other major issues such as premature death, diminished quality of life, decreased life expectancy (Chinenye & Opera, 2014), increased preventable hospital visits, high use of emergency departments, and multiple hospital readmissions. According to Saffer, Cooke, and Keenan (2006), poor health literacy has a significant association between treatment noncompliance and poor health status (Saffer, Cooke, & Keenan, 2006).

The frequency of DM is increasing worldwide and is regarded as the main health problem. The International Diabetes Federation's 2025 Diabetes Atlas estimates that 589 million adults aged 20–79 were living with diabetes in 2024—about one in nine adults—and projects that this figure will reach 853 million by 2050. The Atlas also estimates that diabetes was responsible for approximately 3.4 million deaths in 2024, or about one death every nine seconds. The majority of reported cases are

related to type 2 DM, and most of the people suffering from the disease are in the age range of 40-59 years (International Diabetes Federation IDF, 2015).

DM is increasing globally, and the increase is related to hypertension as well as obesity. In the last few years in the US, the frequency of adults 40-74 years, with BMI of ≥ 30 kg/m², increased from 28-36%, and the obesity problem rose due to lack of physical activity. Diabetic patients are recommended to exercise, have an improved diet, have a healthier lifestyle, and have a strong clinical schedule. In the past era, DM was common in elders over 40 years of age, but now it is becoming common in adolescents and children as well due to lack of physical activity, obesity, and unhealthy eating styles (Vivian, 2006). Many of the patients failed to control their disease with the help of diet, exercise, and pharmacotherapy. So, an appropriate level of literacy is required along with these practices to help them prevent and control the disease. Adherence of patients to drugs, lifestyle changes, and prescribed schedules and routines due to literacy programs related to disease could show better results.

Acquisition of diabetes literacy advocates for the need to establish the [relationship between diabetes management and health literacy](#). American Association of Diabetes Educators (2013) established that literacy skills are high for most Americans living with diabetes. According to their report, lack of health literacy has been blamed for creating a vacuum as regards the attitude of most diabetes patients to manage the disease. Previous researchers have identified a positive correlation between health literacy and self-diabetes management. These studies include patient behavior about self-management and have concluded that adequate health literacy is central to achieving diabetic control. Comparable research was carried out in Europe and established the same results (Van den Broucke et al., 2014). The different implications of these study efforts in diabetic control, however, call for the adoption of more available techniques. One such area that needs comprehensive exploration is the design of interventions that can efficiently accommodate low health literacy, which is largely represented in the 27.8 percent of un-diagnosed cases. This includes identifying and determining the efficacy of techniques that can cater to the needs of patients with low health literacy in a bid to enhance the health outcomes of diabetes therapies (Kim & Lee, 2016).

Needs of diabetic patients

A main challenge for physicians and health care providers is to address the continual needs and requirements of patients with chronic diseases like diabetes. Regular follow-up of patients along with health care workers is important for controlling chronic complications. Studies have reported that the progression of problems linked with diabetes can be delayed or prevented by exacting metabolic control (Wagner et al., 2001). Proper glycemic control is not a single need of diabetic patients, but prevention of complications, infirmity limitation, and reintegration is also needed. Some studies revealed that a lack of adherence to treatment schedules is a result of poor health-related literacy among the public. In the current era, due to the introduction of blood glucose monitoring at home and extensive usage of glycosylated hemoglobin to indicate metabolic control, the main responsibility is

shifted towards patients (Glasgow et al., 2001). It was also mentioned that healthcare professionals have a crucial role in developing patient's understanding of fluctuations in blood glucose levels for self-regulatory actions (Peel, Douglas, & Lawton, 2007).

Self-care in diabetes

Diabetes self-management is described as a process of improving education by understanding and continuing to exist with the complicated nature of diabetes in a social background (Cooper, Booth, & Gill, 2003). Due to the increasing familiarity of concentration towards diabetes treatment is managed by patients or their relatives, it is essential to take consistent and effective measures for self-control of diabetes (McNabb, 1997). Seven basic self-management actions must be present in patients suffering from diabetes, which results in positive consequences.

These seven behaviors are healthy eating habits, being active in routine life, constantly keeping in check blood glucose, acquiescence with treatment, ability to deal with risk factors, ability to follow health instructions, and issue-resolving skills. This suggested advice is effective for physicians and instructors handling patients and helps scientists find new strategies regarding care. Self-management is the most operative and economic attitude to self-management evaluation, and thus, it is mostly seen as unreliable. Diabetes self-management deeds are measures taken by patients to overcome the rate of diabetes by self-control, suffering from diabetes, or at great risk of diabetes (American Association of Diabetes Educators, 2008).

These seven activities seem effective in glycemic control, reducing problems, and progressive development in the quality of life. Moreover, it was noticed that self-management involves not only carrying out these actions but also collaborating with them. Diabetes self-management needs various nutritional and lifestyle changes in the patient accompanied by the helpful part of the healthcare team for keeping a superior level of self-assurance directed to a positive change in performance (Shobhana, Begum, & Vijay, 1999).

Diabetes self-management instruction

As genetics plays a significant role in the expansion of diabetes, different researchers have exhibited the significance of environmental effects. Patients suffering from diabetes have been presented to have an intense effect on the evolution and improvement of their disease by taking care of themselves. This contribution proves fruitful only if the diabetic patients and physicians are well educated about handling this disease and taking good care of the patient. It is assumed that people who are well aware of health care may empathize with the different stages of the disease and have positive effects on the improvement and complexities of this disease (McNabb, 1997).

The American Association of Clinical Endocrinologists lays emphasis on the significance of patients' useful and well-informed contributions regarding self-care. Similarly, the World Health Organization

also acknowledged the importance of patients' knowledge in keeping their disease under control (Hendra & Sinclair, 1997). The American Diabetes Association evaluated the principles of diabetes self-control knowledge and discovered that people who are not well aware of self-management strategies are supposed to face more diabetic complexities than others. A more comprehensive evaluation of self-care knowledge in adults who have type 2 diabetes discovered progress in glycemic control at early stages. However, the noticed progress decreased in about three months after the termination of involvement, and it was recommended that permanent knowledge is required for better results (Williams, Freedman, & Deci, 1998). An analysis of diabetes self-care knowledge shows that awareness is effective in decreasing glycosylated hemoglobin levels.

Diabetes self-care actions

Awareness about diabetes is essential, but the most important thing is to practically follow self-care instructions to help the patient effectively. Self-care actions involve a healthy diet plan, avoiding food with high-fat content, doing routine exercise, checking glucose levels, and taking good care of feet (Glasgow & Strycker, 2000). The most important objective of diabetes self-care is to reduce the glycosylated hemoglobin level, but it can't be the single goal to achieve in the care of a diabetic patient. Variation in self-management deeds must be valued for development regarding conduct modification (Walker, 1999). In diabetes care, self-checking glucose levels is an important task that ensures that the patient contributes to realizing and preserving definite goals regarding glucose levels.

The main purpose of screening is the evaluation of entire glycemic management and the introduction of proper moves at the right time to get maximum control. Self-screening helps to be up-to-date about glycemic levels and enables the suggestion of suitable treatment and diet plans, exercise, and medicine to take good control of the glycemic level. Regardless of the reduction in weight, carrying out exercise on a daily basis has been discovered to be linked to positive health results in diabetic patients (American Association of Diabetes Educators, 2008). The National Institute of Health and the American College of Sports Medicine suggested that all adults, including those who are suffering from diabetes, must take part in exercise on a daily basis (United States Department of Health and Human Service, 2008).

Compliance with self-care activities

A large number of researches have been organized in this field, but accord with a cure for diabetic patients is quite important and a point of worry for health researchers and medical investigators. In people who have diabetes, patients are assumed to obey all the recommended instructions regarding their routine life to keep diabetes under control. These instructions take in suitable lifestyle conduct, along with obeying a suggested diet plan and participating in proper routine exercise, taking medicines on time as suggested by the physician, checking blood sugar levels, keeping in check

disease symptoms, taking good care of foot by following instructions and search for independent health care concerning diabetes or other health issues (Goodall & Halford, 1991). The suggested treatment is further facilitated if required to add all these behavioral actions to the routine life of a patient.

Diabetes self-management education (DSME) is an important part of care for individuals who have diabetes, and it is also essential for a patient's recovery. The National Standards of DSME are recommended to explain better self-management and attentiveness to diabetes and to help diabetes trainers in different ways to spread proof-based knowledge. Due to the continuously changing elements of health care and research concerning diabetes, these Standards are reassessed and reexamined every five years by main establishments and governmental organizations in the diabetes awareness group. A Task Force was organized by the United States Association of Diabetes Educators and the American Diabetes Association in the summer of 2016. Other groups included are the American Dietetic Association, the Veteran's Health Administration, the Centers for Disease Control and Prevention, and the American Pharmaceutical Association. Participants of the force comprised a person who has diabetes, some health facilities scientists, registered nurses, dietitians, and a chemist. They have the task of reassessing the present DSME standards for their accuracy, significance, and logical basis. (Funnel, 2009).

Definitions

According to the US Institute of Medicine, health literacy is the extent to which an individual can gain, process, and comprehend the basic information related to health and services required to make proper health decisions (Nielsen-Bohlman, Panzer, & Kindig, 2004).

Compliance and adherence are the terms that are commonly used to define the degree to which an individual or a patient follows the recommended medication and the aspects that can have a main effect on the treatment outcomes (WHO, 2003).

Adherence

Adherence was defined by WHO as the degree to which the behavior of a patient corresponds to the recommendations of the doctor regarding diet plans, medicines, and lifestyle alterations in the case of chronic diseases (WHO, 2003).

Compliance

Compliance is a term that is sometimes synonymously used with adherence, and it is measured regarding administered doses of medication as a percentage of recommended doses for a specific period (Breitscheidel, Stamenitis, & Schöffski, 2010). However, it is different from adherence as it

does not require the patient to agree to make recommendations.

Statement of Problem:

In the United States, Diabetes has become the leading cause of death and also the cause of other chronic diseases, such as high blood pressure, obesity, and anxiety. Older adults have been more affected by this disease than younger adults. However, Diabetes has become an issue of great concern. Also, diabetes has become the leading cause of complications like blindness, nephropathy, amputations, higher rates of hospitalizations, retinopathy, and great mortality risks. Now, the proper medication and great care are the only ways to help patients overcome these complications and control their sugar levels of the body.

Diabetic patients can control their diabetes by self-monitoring, self-caring, proper medication, monthly basis checkups, and proper exercise. Diabetes patients must also take care of their diet and must inject proper insulin to maintain the sugar level of their body. This will not only control their sugar level but also keep them healthy. For this all-caring procedure, proper knowledge about diet and medicine doses is required. This means that if diabetic patients are aware of the calories in their diet and the way of injecting insulin, then they will be able to deal with their disease in the best possible way. Also, by making them aware of the exercise schedule and self-monitoring, the disease can be controlled. It means that literacy plays a vital role in controlling diabetes. The research also observed that patients with low literacy may have difficulty learning self-care skills and improving glycemic control. Diabetic patients must have health literacy to control their sugar level, have a healthy diet plan, have a better exercise schedule, and have better knowledge of self-monitoring. Health literacy will make the patient able to understand the better time to check their sugar level, to avoid food having more calories and sugar, to have better exercise and walk patterns, and to have better self-care in the case of high sugar or low sugar levels in the body. This study will evaluate literacy compliance with diabetic treatment therapy.

Significance of Study

The significance of the present study is that it will evaluate whether health literacy is more important for older diabetic patients than younger patients to have better diabetic treatment therapy or whether health literacy plays the same role for both older diabetic patients and younger diabetic patients. It will evaluate the relationship between health literacy and Diabetes control. The major issue is that there is no cure for diabetes, and the only solution to this problem is to control diabetes by self-monitoring, self-caring, proper medication, monthly basis checkups, and proper exercise.

Theoretical and Conceptual Perspective

Health literacy is limited among diabetic patients in the US, which increases the threat of worsening the disease due to poor health condition handling. The current study focuses on the obvious role of patients, along with health care providers, in the prevention and control of chronic diseases. This role can be played actively by patients if they are aware of their disease and resourceful enough to handle their disease (Ha & Longnecker, 2010). The primary means of information gathering enlisted are the research works found in the online libraries as well as products publically available on open sources like American Diabetes Association accumulated data, Health and Adult Literacy Survey (HALS), and articles from MEDLINE, CINAHL, Psyc INFO, PUBMED, Walden library databases, and other reliable internet sources. This paper dissects the multiple layers of the impact of health literacy on the patient's compliance with diabetic treatment and routine. It explains the importance of health awareness in patients with chronic diseases, especially diabetes. The significance of health literacy related to diabetes was discussed in detail with reference to the patients of different age groups, such as the younger between the ages of 12-18, adults between 18-30, and then the aged people between the ages of 30 and 60.

As diabetic patients need great self-maintenance, self-control awareness is generally suggested to increase the success ratio and reduce the expenditures of cure. Though various self-management (DSM) plans are present, the required conditions for their active employment were not described clearly. In this paper, we analyze the work on implementation fidelity (IF), the extent to which these plans are presented as envisioned, as an element inspiring the efficacy of diabetes knowledge. Medical, psychological, and knowledge-based study records will be explored to find available research on diabetes knowledge explaining the application method. Studies describing the intervention, compliance, fidelity, and reliability were involved in evaluating the basic factors of IF. From early 418 abstracts, 20 printed papers were reserved for a deep evaluation concentrating on the factors of IF. The intervention element was primarily analyzed through examination; however, the intervention amount was evaluated through the self-report method.

The cure for diabetes is not present, but it can be controlled through proper medication, a healthy diet, and some variations in everyday life. The study explores the fact that self-control of diabetes through diet is effective for people with social and financial complications. The basic purpose of our research is to assess the theory that social and financial factors greatly affect the variation in diet after the identification of diabetes. The important factors that affect nutritional variation are the extent of knowledge of patients who have diabetes and may or may not belong to a family. The current study proves that socioeconomic elements affect patients when there is a need for change in their eating habits after the identification of diabetes. The quantitative research method is employed to complete this task. The method is an inquiry that investigates a contemporary phenomenon and context and uses multiple sources of evidence (Yin 1984).

This study is about the importance of health literacy for the prevalence of diabetes. It means that if

healthy people are aware of diabetes, then they must take care of their diet, physical activities, sleeping time, sugar level, and other measures to remain safe from diabetes. Similarly, the diabetic patient may properly use technology, medicines, diet plans, and physical activity plans to control their diabetes. In this way, the study is of great importance because it provides a great knowledge of how health literacy is important to control diabetes. With the help of this study, the health care and nursing staff will be able to make a plan to make people of the United States aware of diabetes and will take steps to increase health awareness in diabetic patients. Such plans or healthcare checks will enable the healthcare faculty to guide the people about the prevalence of diabetes and make them aware of diabetes and its effects on life.

Assumptions

A lot of assumptions were present about this study. The first and foremost assumption was that several elements are responsible for the low literacy of diabetic patients about their health in the US. The second supposition was that this study would help develop materials that could support the increase in literacy levels of diabetic patients. The third postulation was about understanding the relationship between compliance and health literacy. The last notion was that increased health literacy could help patients properly deal with their disease, and the people using the technology instrumentations can easily control and check the diabetes level of the body.

It was assumed that the study would help healthcare providers and nursing staff, but it would play an important role in helping people understand how health literacy may help them with the prevalence of diabetes. With the help of this study, the people, the health care, and the nursing staff will focus on health literacy and will make people aware of diabetes and other chronic diseases. In this way, the people will be able to understand the importance of health measures and will manage their lifestyles to have a healthy life.

Scope and Limitations

The scope of this study is very broad as it investigates the effects of health literacy among diabetic patients in the US in the age range of 18 to 60 years. It will determine whether the level of literacy can affect a patient's health or has no effect on the health outcomes. In case of positive effects of health literacy on a patient's health, this study will help the health organizations and health care providers to develop literary material according to the literacy level of the general population and help them to devise certain beneficial apps so that the technology can play its part to support patients in the modification of lifestyle and routine according to the requirements of their disease.

With the help of this study, the people, the health care, and the nursing staff can focus on health literacy and can make people aware of diabetes and other chronic diseases. In this way, the people will be able to understand the importance of health measures and will manage their lifestyles to have

a healthy life.

The current study has several limitations, and a new body of knowledge about patient compliance with diabetes treatment cannot be added on the basis of cross-sectional data. Without using a survey or questionnaire to determine the exact response of patients about the role of health literacy on the basis of provided literature and technology, the direct response of a corresponding sample cannot be revealed. The non-experimental design used in the study cannot help to derive a causal relationship of variables. The study cannot distinguish the effect of health literacy on the patient's compliance with type 1 and type 2 diabetes. The study cannot describe the possible outcomes of health literacy in patients with type 1 or type 2 diabetes with the help of technology or literature. The study does not highlight the deficiencies present in current technology or literature according to the patient's perspective. Despite the several limitations discussed, the study provides data to design new literature and technology that can increase health literacy among diabetic patients to increase compliance with treatment.

Literature Review

A lot of research has been done to comprehend the relationship between health awareness and its accordance with diabetic cure treatment. Since the 20th century, academics have been struggling to assess how health awareness affects the treatment of diabetes. Schillinger stated that type 2 diabetes affects a person in a different context, so health awareness helps people overcome health imbalances and keep diabetes under control. Particularly, there is a need for health awareness in African Americans to comprehend how to have a hold over the increasing rate of diabetes. This will make it easier to get better treatment and a healthy diet to decrease the discrepancy hazards (Trinacty et al., 2009).

Patients' accordance with the advised treatment to take control over the disease is assumed as the basic component that helps manage blood sugar in diabetic patients who are taking insulin, with the help of insulin amount, healthy food habits, and routine exercise. Non-cooperation is attributed, which differs in significance for different diabetics. The analysis consisted of ten female diabetes patients, of which two were uremic and eight females were renal transplant receivers and was organized to evaluate their accordance with suggested shoe instructions. Witnessed accordance with using proper shoes is outlined as transpiring for the reason that matches the lifestyle of patients. It was observed that three out of ten females refused to wear the suggested footwear at all, but one female changed her approval of the suggested shoes. Bonds among patients and the health care panel associates are presented as a source of increasing accord customizing the health team's care of the patient, which is submitted as the most important strategy (Friedman, 1988).

Insufficient useful health awareness in general, yet its effect on patients suffering from enduring diseases is not explained clearly. To observe patients who have diabetes as well as depression, Williams (1998) explored the link between useful health awareness of patients and awareness of their

enduring disease and cure. Awareness was evaluated by the Test of Functional Health Literacy in Adults. Understanding of their disease was measured in patients suffering from diabetes or depression by asking 21 questions related to depression and 10 questions related to diabetes. Those questions were related to the basic features of common ideas generally practiced in health centers as a whole; 114 patients with diabetes were enlisted, and 94% of individuals were well aware of the indications of increasing diabetes levels as compared to the other 50% of patients with insufficient knowledge. Insufficient useful health awareness plays a part in the main obstacle, so patients should be aware of serious diseases and recent struggles to overcome them (Williams M. V., 1998).

An ideal setting can be provided by managed healthcare organizations to resolve several health-related issues that severely affect the healthcare delivery system. The research conducted on this subject can be used to develop intervention programs targeting specific subgroups of patients at high risk. These subgroups include the low-literate and elderly population. Some possible intervention strategies for this population could be the usage of audio or video tapes about curative instructions instead of written material. These tapes can provide instructions with the help of visual cues. These efforts can be made more successful by a partnership of these organizations with medical professionals, pharmacists, literacy councils, public groups, medical groups, hospitals, and agencies of health policy. The combined efforts can have a massive impact on health literacy and health outcomes related to chronic diseases, which are extremely common, like diabetes (Gazmararian et al., 1999).

The people who are less aware of health care experience a large number of health issues, and that's why they are in great danger of health discrepancies. When people are familiar with diabetes and its consequences, they make efforts to keep their sugar levels in check time and again and to overcome health discrepancies (Kim, Love, Quistberg, & Shea, 2004). Patient knowledge has increased from medically dominated and limited sources for patient education to help patient enablement in personal, governmental, and strategies regarding health issues. In this essay, the authors revealed both the ancient and present situation of patient awareness in the United States and investigated the effects of enablement programs based on new proposals and guidelines regarding patient awareness. By taking diabetes awareness as an example, improvements in patients' motivation and enablement are discovered, and the upcoming trends and demands of this subject are taken into consideration (Roter & Stashefsky-Margalit, 2001).

According to the records, about 90 million Americans have insufficient knowledge about health measures. Nearly two million citizens of the United States were not equipped with the English language, and millions of others communicated in it badly. The disgrace of ignorance or lack of ability to communicate in the United States is leading patients to reveal their pain and problems. Identifying these realities is a major first step in increasing health awareness for these disabled residents. By using teaching methodologies on patients' basic requirements, nurses can make sure that patients self-comprehend their problems related to health and plan their scheme of self-care. Facts and figures considerably reveal the great trend of ignoring these requirements. Patients who are unable to comprehend their scheme of care cannot fulfill the suggestions and recommendations. As a result,

patients face complicated problems. Physicians and the people related to the health care system must be equipped with different languages to better help patients. Less educated patients' communication way and the help of skilled translators significantly enhance the excellence of care and treatment for their patients and the ensuing effects (Dreger, 2002).

Review of Literature Supporting the Theoretical Framework

Health and Retirement Research also issued their findings in 2003 that high rates of blood pressure, excessive weight gain, suffering from diabetes for a long period, taking insulin treatment, greater mental loss, and suffering from depression are the basic reasons for diabetes. If a person is familiar with all of these symptoms and also familiar with the health maintenance tips, then there is very little chance of being affected by diabetes. Thus, it will be simpler for a diabetic patient to keep himself in check from time to time and to take care of himself (Feil et al., 2009). However, their research only provided information on how awareness can help healthy people to prevent diabetes. Then, in 2004, Kim and Rothman issued their findings, in which they conversed about the link between health awareness and diabetic impacts. They made a profound exploration of people having low health awareness and facing challenging problems in keeping diabetes under control. They were thus determined that getting knowledge supports them in a better way to control diabetes.

A patient's ability to remember is half of what a doctor delivers during a checkup of a patient. To improve memory, understanding, and obedience, it is suggested that doctors stimulate patients' awareness about new perceptions and modify previous knowledge, especially in patients who have less useful health knowledge. It is unknown how often doctors use this communicative method of awareness, or it may be linked with better health results. Close examination is used to evaluate the degree to which initial care doctors practicing in local hospitals evaluate patients' memory and understanding of new perceptions during checkups of patients by utilizing recorded tapes of visits to 38 doctors and 74 patients of English speaking suffering from diabetes and less useful health knowledge. It was observed whether there was a link between the doctor's submission of this collaborative, communicative approach and patients' reduced rate of diabetes by means of knowledge from medical and managerial records.

Doctors evaluated memory and understanding of any new perception in 12 of 61 visits and for 15 of 124 new perceptions. The patients whose doctor evaluated memory or understanding were more expected to have hemoglobin A_{1c} level less than average ($\leq 8.6\%$) as compared to the patients whose doctor did not do anything for his awareness (odds ratio, 8.96; 95% confidence interval, 1.1-74.9). After evaluating a lot of logical recession, the two variables autonomously linked with better reduction of diabetes and improved health awareness rate. Doctors serving patients with basic treatment with diabetes and less useful health awareness evaluated patients' memory or understanding of new perceptions. Ignoring this action in interaction reveals a neglected prospect that may have significant

medical effects (Schillinger, 2003).

Though fewer treatment concerns may lead to insufficient diabetes management, methods to evaluate attention practically in normal medical training must be started. Research by Pladevall (2004) was organized to find whether pharmacy allegation-centered assessments of treatment carefulness are linked with medical effects on patients with diabetes. The research consisted of the people of southeastern Michigan and involved 677 patients about 18 years old with symptoms of diabetes, depression, and increased cholesterol levels. Non-supportive and careless patients showed more dreadful results than careful patients. Thus, allegation-based assessments of treatment attentiveness were linked with better results in patients facing diabetes and, at last, proved to be worthwhile in medical practice. Further exploration is required on techniques to make people aware of allegation-based carefulness tactics in normal medical practice and the way of employing these tactics to greatly increase attentiveness and better health results in the treatment of serious diseases (Pladevall, 2004).

Shillinger D. (2006) tried to find whether awareness facilitates the association between knowledge and diabetes control in diabetic patients. They evaluated knowledge realization, knowledge experimenting with the Short Test of Functional Health Literacy in Adults (s-TOFHLA), and diabetes control in 395 patients who have diabetes in a local hospital in the United States. We practice pathway study to relate two comparing patterns to describe diabetic management. The direct results pattern assessed how knowledge was associated with HbA1c; the intercession pattern evaluates the intensity of the direct association when the other means of knowledge to awareness of HbA1c were complemented. The two patterns of direct influence of knowledge on HbA1c and the pattern with awareness as a facilitator were kept up by suitable perceived facts. The intercession pattern is, therefore, an important development, with the supplementary way from awareness to HbA1c demoting the differences from previous data ($p < 0.01$). After taking it in this way, the direct association between knowledge and HbA1c dropped to an insignificant level (Shillinger D, 2006).

Heightened life expectations and the maturity of people collaborate with the increasing rate of obesity and idleness, which results in a record rise in diabetes frequency all over the world. The disorder and its long-term effects have exceptional influences and challenges associated with aging. Its most important symptom is postprandial hyperglycemia; different health issues are present, and the possibility of heart disease is greater than before. Regular examination is necessary for timely identification and suitable treatment. The method of multipurpose controlling emphasizes diet, exercise, awareness, good social conditions, mental health, care of metabolic problems, and cautious intake of medicines as the basis of treatment for aged persons. The cure must be personalized to the specific patient, and the support of family should be incorporated with the balanced exploitation of social resources. A proven, inclusive, and practical approach is required to decrease the rate of illness and death from diabetes in aging (Rizvi, 2007).

About 50% of patients suffering from enduring disorders cannot get the best medical advantage from treatment due to no fulfillment of cure schedules. The absence of accord is linked with bad health

results, greater hospitalization, lower life standards, and increased healthcare expenditures, all of which are responsible for this issue. Though inadequate accord and stubbornness are general in various disorder conditions, they might be especially inadequate in the cure of diseases in which no symptoms arise, like osteoporosis. Patient awareness has been established to greatly enhance accord with treatment in different situations and disease seriousness. In research where patients get knowledge resources related to bone densitometry and doctor consultation, 67% of patients were acquiescent to the cure after six months.

Patients' gratification with treatment is associated with rehabilitation; by taking better care of patients through satisfying anticipations for regular checkups and supplying regular feedback, the person providing health care can effectively increase accord. Self-control schemes concentrate on the routine management of enduring disorders, which results in better health conduct and health position. Irrespective of the method employed, consideration should be focused on finding the patients with the least interest in treatment and offering the help and knowledge that these patients need to stick to the treatment of the disease (Gold, 2006).

Good self-control of serious diseases in mature grownups is important for better health results. The comparative significance of two extents of doctor interaction, educating patients and participatory decision making (PDM), was evaluated for elderly patients with diabetes. A nationwide examination of 1588 persons who had diabetes was organized. Self-made interactions were observed in patients' evaluations of their doctor's provision of information PCOM and PDM with patients described self-control.

In all these elderly patients, both of their diabetes benefactors provided useful knowledge, and attempts to engage them in therapy decision-making effectively were linked with greatly improved diabetes self-control and engaging aged patients in deciding goals about serious diseases and decision-making. All these measures seem to be essential in self-management fields that need more following routine modifications concerning workouts, healthy food, and monitoring glucose levels (Heisler, 2007).

Among augmented distress concerning the harmful significances of less health awareness, it is still unidentified how awareness about health affects fitness conditions and health service employment. By taking 489 aged patients, Cho (2008) discovered the transitional aspects that can relate health education to health conditions and employment of health services, for example, hospitalization and emergency treatment. It was estimated that people with more health awareness would show better health conditions, and very often, they utilize emergency treatments and hospital services because they have a greater understanding of knowledge about their disease, much better conduct, better use of preventive measures, and great accordance with medicinal treatment. The average results of this research revealed that health education had greatly affected health consequences and that no one of these differences of concern was an important transitional element by the help of which health knowledge has an effect on the utilization of health services. It was proposed that increasing health knowledge may perhaps be an operative approach to improve health conditions and overcome the

use of costly services in hospitals and emergency rooms for old patients (Cho, 2008).

A study was reported by Tang et al. (2008) which examined the relationship between health literacy and awareness of complications related to diabetes mellitus. Functional health literacy was tested among adults through a test. The prevalence of the disease is increasing rapidly throughout the world. However, health education has improved in the previous few decades, especially in the area of diabetic care. So, health literacy and awareness about chronic diseases and their complications are extremely increased, but these efforts are unable to decrease the prevalence of diabetes. The study focused on diabetic control among patients, and it was concluded that effective education of patients could improve diabetic control, but it requires specific educational strategies to improve patients' literacy level related to health and self-management (Tang, Pang, Chan, & Yeung, 2008).

Diabetes self-management education (DSME) is an important part of care for individuals who have diabetes, and it is also essential for a patient's recovery. The National Standards of DSNE are proposed to explain better self-management awareness about diabetes and to help diabetes trainers in different ways to spread proof-based knowledge. Due to the continuously changing elements of health care and research concerning diabetes, these Standards are reassessed and reexamined every five years by main establishments and federal organizations in the diabetes awareness group. A Task Force was organized by the United States Association of Diabetes Educators and the American Diabetes Association in the summer of 2016.

Other groups belong to the American Dietetic Association, the Veteran's Health Administration, the Centers for Disease Control and Prevention, the Indian Health Service, and the American Pharmaceutical Association. Participants of the Task Force comprised a person suffering from diabetes, some health facilities scientists, registered nurses and dietitians, and a chemist. The Task Force had the task of reassessing the modern DSME standards for their accuracy, significance, and logical basis. The standards were then reassessed and reexamined according to present confirmations by professionals (Funnel, 2009).

Attentiveness to oral diabetes-controlling drugs is quite useful. Variance in treatment carefulness may lead to health discrepancies regarding black diabetic patients, as well as increased microvascular rates, increased disability, and early death risk. The research by Trinacty et al. (2009) involved some black and white diabetic patients. Noteworthy white-black variance in attention levels was uniform during the entire treatment of patients, starting from the metformin cure. Cultural dissimilarity in attention regarding oral diabetes controlling therapeutic treatment carries on even with an equal approach to treatment. Initial and constant stress on treatment attention from the beginning of therapy might condense permanent cultural variance in medicinal therapy and its consequences (Trinacty et al., 2009).

The awareness level of a patient greatly influences various aspects of treatment through medicine and also affects the evaluation of obedience from the patient. The purpose of this study is to plan and estimate an obedience level regarding medication appropriate for putting into practice in all stages of

patient awareness. The Adherence to Refills and Medications Scale (ARMS) was established, initially verified, and managed on 435 patients suffering from cardiac disorders. The validity of ARMS was assessed by comparing results. Patients with fewer points, according to ARMS results (who show much obedience), considerably had a tendency to manage their diastolic blood pressure and were more likely to manage systolic blood pressure in a much better way. The ARMS is a useful and trustworthy medication obedience scale when utilized in people suffering from enduring disorders, along with best functioning features even in less aware patients (Kripalani, 2009).

Ethnic and semantic variations, as well as social and financial conditions, contribute to less awareness of health, which is described as the lack of ability to comprehend or follow basic recommendations for treatment. Health education is acknowledged as the main aspect of patient acquiescence, diagnosis tests, and results of enduring disorders. Admirable work has been introduced by the American Medical Association and other establishments to deal with less health awareness in patients. Very little work has been completed to present health education from the wider perspective of socioeconomic and national dissimilarities in patients and benefactors, which obstruct interaction and consent. The analysis done by Shaw (2009) inspected the beneficial effects on health education, disease diagnosis, and results of the enduring disorder. It was discussed that educational philosophy across health and disease greatly influences a person's capability to comprehend and follow the suggestions of a physician. The study put forward the main factors of the connection between health education and national differences in philosophies regarding health, which is worth more investigation (Shaw, 2009).

A very slight awareness is present among people about hypoglycemic incidents. Patients are equipped with inadequate health literacy (HL), especially patients with type 2 diabetes, which can hinder diabetes self-control, so limited HL may result in an increase in hypoglycemia rate. To conclude, the ratio of itinerant type 2 diabetes patients having curative treatment recounting major hypoglycemic incidents in the last few months, and assessing whether health literacy is linked with hypoglycemia, 14,357 adult patients of type 2 diabetes getting medication treatment at KPNC were assessed. Major hypoglycemia was a common problem with this group of type 2 diabetes patients receiving treatments for hypoglycemia, and particularly the patients with inadequate health literacy were at great risk. There is a need for strong efforts to decrease hypoglycemia and support patient well-being, which needs a self-control system especially suitable for patients with inadequate health literacy, who need more attentive observation, traditional glycemic goals, or keeping away from medicines results in hypoglycemia (Sarkar, 2010).

Even with noteworthy developments in physical analysis and cure, the presence of insufficient metabolic control remained a problem. Inadequate diabetes control might be exposed by the insufficiency of diabetes self-control by patient's insufficient mediation approaches by physicians. An analysis was presented by Nam (2011); the main objective of this organized analysis was to precisely understand several obstacles in the way of diabetes control from patients' and doctors' views. An examination of previous studies discovered 1454 research papers published in the English language from 1990 to 2009, focusing on type 2 diabetes, patient hurdles, physician hurdles, and self-control. Patient's obedience, approach, views, and awareness regarding diabetes greatly affect diabetes self-

control.

Other significant features comprised the patient's financial condition and collective provision. Physicians' approach, views, and awareness regarding diabetes also affect diabetes control. Physicians may greatly affect the patient's conception by good interaction abilities and by providing a better health care structure. Finding hurdles in the way of diabetes control is important to progressing to the excellence of diabetes treatment, together with the correction of metabolic rate and diabetes self-control. Advanced research studies show that these hurdles are significant in developing medications for persons with type 2 diabetes (Nam, 2011).

Diabetes is an enduring ongoing metabolic ailment indicated by hyperglycemia, especially as a result of a lack of insulin hormone. World Health Organization evaluated that approximately 346 million people are suffering from diabetes all over the world. It is possible that this amount will be doubled by 2030 without any intercession. The treatment of diabetic patients is not required. Only diabetes management is sufficient, but some precautionary measures, disease control, and restoration are needed. There are seven basic self-management actions for patients having diabetes that can show positive results that is healthy food consumption, physical activity, regular check on blood glucose levels, acquiescent with medicinal treatment, active issue resolving ability, good handling ability, and lifesaving actions. These seven actions proved to be progressively associated with better diabetes management, a decrease in health issues, and positive progress in quality of life. People having diabetes have been presented to have an intense effect on the advancement and improvement of their health condition by taking an interest in their own health management. Regardless of this element, acquiescence towards these behaviors is very low, particularly when focusing on enduring modifications. Along with other contributing factors, the role of physicians in encouraging self-management is important, and there is a need to lay emphasis on it. To understand the multi-aspect character of the disease, a scientific and multi-purpose methodology is needed to stimulate self-management exercises in diabetic patients to avoid any enduring health issues (Shrivastava, 2013).

As diabetic patients need great self-maintenance, self-control awareness is generally suggested to increase the success ratio and reduce the expenditures of cure. Though various self-management (DSM) plans are present, the required conditions for their active employment are not described clearly. In this paper, we analyze the work on implementation fidelity (IF), the extent to which these plans are presented as envisioned, as an element inspiring the efficacy of diabetes knowledge. Medical, psychological, and knowledge-based study records were explored to find available research on diabetes knowledge explaining the application method. Studies describing the intervention, compliance, fidelity, and reliability were involved in evaluating the basic factors of IF. From early 418 abstracts, 20 printed papers were reserved for a deep evaluation concentrating on the factors of IF. The intervention element was primarily analyzed through examination; however, the intervention amount was evaluated through the self-report method. Only original research discussed the link between IF and intervention efficacy. Regardless of the significance of IF in attaining plan outcomes, the IF of DSM plans still needs analysis and assessment. The outcomes of this analysis show that diabetes self-management accounts must scientifically explain how the plan was operated. The

influence of IF on plan aftereffects requires more research (Schinckus, 2014).

Health knowledge is an obstruction to precisely comprehending medication knowledge. Present medication knowledge is so challenging to familiarity with among less aware people, who are in great danger by misunderstanding the labeled directions on medicine, prescribed amount, time, precautionary measures printed information, and physician advice. The main objective of this paper was to scientifically analyze the data about increasing medication awareness and compliance in less aware people. It includes less aware people, contains effective methods for education or compliance, and concentrates on data regarding medication (Wali, 2016).

The cure for type 2 diabetes (T2D) is not present, but it can be controlled through proper medication, a healthy diet, and some variations in everyday life. It is proposed that self-control of diabetes through diet is so problematic for people having social and financial complications. The primary purpose of our research was to assess the theory that social and financial factors greatly affect the variation in diet after the identification of T2D. The important factors that affect nutritional variation are the extent of knowledge of patients who have type 2 diabetes and may or may not have a family. The study proved that socioeconomic elements affect the patients when there is a need for change in their eating habits after the identification of T2D. Moreover, family plays an important role in nutrition self-control, most likely forcing a type 2 diabetes patient to follow the nutrition suggestions of a physician (Mancini, 2017).

Research was conducted by Grammatikopoulou (2017) to measure food quality and awareness about the disease in patients with type 2 diabetes. An inclusive analysis was controlled, with data from 75 patients having signs of type 2 diabetes. Awareness about the disease was evaluated with the help of the Diabetes Knowledge Test (DKT), and food quality was tested with the Healthy Eating Index (HEI), estimated from last-day memories of diet. The study exposed less popularity of proper eating habits and disease awareness in patients having type 2 diabetes, with different factors influencing food quality and diabetes awareness in both males and females (Grammatikopoulou, 2017).

Diabetes self-management education (DSME) and Medical nutrition therapy (MNT) recover patient results; bad refund limits the approach to carefulness. In the study done by Marincic (2017), a system was established to observe patients' recovery according to a registered nutritionist diet plan. A random sample of about a hundred patients who had type 2 diabetes and had fulfilled DSME and customized medical nutrition therapy was selected from June 2013 to 2014 from electronic medical records. Statistics were obtained from body mass (measured as kg/m^2), weight, hemoglobin level, blood sugar, and fats. Reconsidering chart examination offers an effective pattern for extracting the present results of the patient following the diet plan of a registered nutritionist. With the assistance of collective compensations and patients' approach to diabetes self-management education and other customized medical nutrition therapy, the clear drop was examined in primary results of weight, body mass hemoglobin, and triglycerides (Marincic, 2017).

However, this research either provided information about the importance of awareness of diabetes for

the prevalence of diabetes or the level of awareness and unawareness amongst the people about diabetes. No research could provide any positive information about how health literacy has an impact on the prevalence and control of diabetes. If the research was conducted to evaluate its impact, then most of the time, the results were not positive. However, this study will show how health literacy has a positive impact on the prevalence and control of diabetes in the United States.

Review of Literature Using Proposed Methodology

Researchers evaluated that low health literacy is a major factor which, if dealt with properly, can help to reduce the disease burden in case of chronic diseases by appropriate skills of self-management. Several studies were done on the subject of health literacy and its impact on diabetes compliance using different methods. The quantitative methodology was used along with meta-analysis in some studies, as done by Montoya (2015). Cross-sectional data was used for secondary analysis from 2009-2010 surveys of the National Health & Nutrition Examination. The study focused on the self-managing behaviors of diabetic patients of age groups ≥ 55 years and more than 55 years of age as adults, with the help of a quantitative methodology. Four main demographic factors were considered for the study: age, gender, marital status, and education. It was evaluated in the study that young people who were single with strong financial status were more unaware of their disease status. (Montoya, 2015).

Another study conducted by Berkman et al. (2011) was based on previous research on the topic of health literacy and its outcomes. The study was focused on English articles from 2003 to February 2011 from Medline, ERIC, and PsycINFO. They selected articles that particularly focused on health literacy according to patient health outcomes. It was evaluated that low health literacy is related to poor health outcomes and high rates of mortality, as low literacy levels resulted in poor handling of chronic diseases by patients, which was associated with a higher rate of hospitalization, poor medication routine, and health status (Berkman, Sheridan, Donahue, Halpern, & Crotty, 2011).

An analysis was done by Easton et al. (2010) with a population of low-literate people who had difficulty understanding the medical literature related to their disease. These difficulties cannot be easily recognized by physicians and can cost the healthcare system. Previous reviews and research were used in this study to extract data related to low HL and health status. 24 reviews were analyzed, and it was evaluated that poor health is based on low literacy levels up to some extent, as it resulted in poor health management by the patients (Easton, Entwistle, & Williams, 2010).

A study done by Wolf, Gazmararian & Baker (2005) surveyed 2923 individuals to check the effect of health literacy on self-management of diseases. It was evaluated on the basis of a survey that low HL results in poor health conditions and affects a person's normal working hours. Poor health results in mental health problems like stress and anxiety, decreasing the quality of life of individuals. So, it is important to provide proper health literacy to patients to increase the life span of the population suffering from chronic diseases (Wolf, Gazmararian, & Baker, 2005).

Research by Pladevall (2004) was conducted to check whether assessments of treatment carefulness are linked with medical effects on patients with diabetes. The quantitative research consisted of the people of southeastern Michigan and involved 677 patients about 18 years old with symptoms of diabetes, depression, and increased cholesterol levels. Non-supportive and careless patients showed more dreadful results than careful patients (Pladevall, 2004). Shillinger D. (2006) found whether awareness facilitates the association between knowledge and diabetes control in diabetic patients. He evaluated knowledge realization, knowledge experimenting with the Short Test of Functional Health Literacy in Adults (s-TOFHLA), and diabetes control in 395 patients who have diabetes in a local hospital in the United States (Shillinger D, 2006).

Methodology

The purpose of this study is to evaluate the relationship between health literacy and Diabetes control. In the U.S., diabetes has become the major leading cause of death, and every one in four people is a victim of this disease. Diabetes is not only the leading cause of death but also causes so many other chronic diseases in patients, due to which the life of the patient becomes the curse. Also, it is found that older people are facing this disease more than adults. However, now, diabetes has also become a common disease in adults and younger.

The major issue is that there is no cure for diabetes, and the only solution to this problem is to control diabetes by self-monitoring, self-caring, proper medication, monthly basis checkups, and proper exercise. This can only be done by having knowledge about diabetes and its preventive methods. Diabetes patients must also take care of their diet and must inject proper insulin to maintain the sugar level of their body. This will not only control their sugar level but also keep them healthy. For this all-caring procedure, proper knowledge about diet and medicine doses is required. This means that if diabetic patients are aware of the calories in their diet and the way of injecting insulin, then they will be able to deal with their disease in the best possible way. Also, by making them aware of the exercise schedule and self-monitoring, the disease can be controlled. It means that literacy plays a vital role in controlling diabetes.

When it becomes clear that health literacy is of great importance in preventing and controlling diabetes, then in this research, we will find a relationship between health literacy and preventive measures for diabetes. For this purpose, the research design of the study will use quantitative methodology. This research methodology will be based on the researched material from different resources to understand how, at different times, literacy has played a positive role in helping diabetic patients. The major focus of the research is to evaluate whether literacy leaves a positive impact on the prevalence of diabetes or has no impact on it.

Initiative Design/Methods

The initial design of the research was a meta-analysis approach in which the data was collected via different sources, and then a filter was applied to analyze the useful data, and the remaining was ignored. The research data was based on four approaches. How does health literacy help diabetic patients control their body sugar and insulin levels? What methodologies should be used to control diabetes for people with low literacy levels? How may health literacy help aged people control their diabetes? How modern technology and its awareness may help diabetic patients to control their diabetes.

Initially, the research design will be analyzed separately for younger, adult, and older people. The purpose of this separate analysis is to examine the ratio of diabetes in younger adults and older people. Moreover, it will help to understand how literacy helps these people with the prevalence of diabetes. This means that the sample design will consist of younger people between the ages of 12 and 18, adults between the ages of 18 and 30, and then older people between the ages of 30 and 60.

The various studies reviewed indicated that lifestyle or behaviors play an essential role in the prevalence of diabetes among younger adults and aged people. Therefore, the use of the detailed design must be highly efficacious for both descriptions, as well as the acquisition of pertinent information on informational resources, personal factors, awareness, health-promoting behaviors, and knowledge regarding the disease, and to facilitate the collection of huge amounts of unique data. Thus, by reviewing the data from different resources, it was evaluated how literacy can help diabetic patients control their sugar levels and what hurdles can be faced during this research or in the future.

Population and Sampling

The population for this proposed initiative includes younger people between the ages of 12 and 18, adults between the ages of 18 and 30, and then people between the ages of 30 and 60. The population of the United States has been considered in the research because the purpose of the research is to evaluate how health literacy is helping the public of the United States with the prevalence of diabetes. With the help of this population and sample, it became easier to evaluate the impact of health literacy on different people of the United States belonging to different age groups, and finally, a general conclusion can be drawn about how health literacy is impacting the prevalence of diabetes.

Variables

In this research, the major variables are health literacy and diabetes treatment therapy. The variable health literacy is an independent variable because health literacy can be provided to younger, older, and adult people, and it does not depend on anything. The people will be guided to use the

information technology tools for the prevalence of diabetes, better physical activities, better diet plans, proper care, and medication to control diabetes. It is on the patient's wish that either he wants to learn from the literacy or is not interested. However, the second variable is the prevalence of diabetes, which depends on health literacy and is a dependent variable. With the help of this variable, the study will evaluate whether health literacy helped the patients control their diabetes level or whether it was useless to educate people about diabetes and its prevention. Thus, with the help of this variable, the study will conclude the impact of health literacy on the prevalence of diabetes in younger adults and old people.

Data Collection

The research design of the study was a quantitative analysis of secondary data. The research question will be examined by analyzing the correlation between the two variables, existing variance, and a chi-square test for homogeneity with regard to previous studies. The independent variable is health literacy, and the dependent variable is diabetes treatment therapy. SPSS was also computed to generate logistic regression, which will be used to interpret the p-values. The data was collected from the following resources;

- American Diabetes Association accumulated data.
- Articles are from MEDLINE, CINAHL, Psyc INFO, PUBMED, Walden library databases, and other reliable internet sources.
- Health and Adult Literacy Survey (HALS).
- Others.

Also, it was evaluated how health literacy impacts the patient's care, diet plan, physical fitness, and medication to control diabetes. Diabetic treatment therapy consists of the following objectives.

Patient's Care

Secondary data was approached to understand how the patient's care can be affected by health literacy. Patient care is different for different age groups because younger cannot care for themselves, adults are sensible enough to take care of themselves on their own, and old age people also cannot take care of their medication and diet and need someone who can look after them. That is why the research data for different stage groups was different. The younger ones need extra care because they don't understand how to have control over a diet and what is good and what is bad for them. In this condition, the patients and family members play a vital role by guiding them about their disease and by taking care of their diet and other physical activities. Moreover, the younger generation does not know the importance of medication; thus, the parents need more attention and care to take care of the proper medication of the younger generation so that the dosage of insulin is not disturbed.

Secondly, the secondary data was searched to understand how literacy impacts the prevalence of diabetes in adults. It is easier to guide adults because they understand the importance of care, medicine, and diet care for their health and the prevalence of diabetes. Just a little guidance can help them to control their diabetes.

The secondary data was collected to understand how old people need extra care. Old people cannot understand things as early as adults can, which is why health literacy has very little impact on the prevalence of diabetes. Moreover, they are reluctant to change their routines and traditions, and that is why it is quite difficult to make them agree to change their lifestyle to control diabetes. Moreover, the data on how family support can help them with the prevalence of diabetes was searched.

Patient's Diet Plan

It is quite difficult to plan a diet plan for younger people because they are growing and need more nutrition than others. Moreover, the younger cannot understand the importance of a diet plan for the prevalence of diabetes, and that is why they need extra guidance and care to be careful in eating sweets and chocolates and other diets that have more sugar. The secondary data was collected to understand what diet plan can be the best for younger people with diabetes, which must be essential for their growth and should be helpful in controlling their diabetes level, too.

Adults and old age people are well aware of health issues, and thus, a little guidance on their diet plan can help them with the prevalence of diabetes. The secondary data was collected to understand how the diet plan can be helpful for them to control their diabetes as well as to have a normal, healthy life like others.

Physical Exercise

Proper physical exertion can help the patient to control the diabetic level. In fact, a proper physical fitness plan is also helpful for healthy people because it helps in disease prevention, such as obesity, hypertension, diabetes, and others. However, there must be a proper physical fitness plan because diabetic patients cannot exert due to unstable sugar levels in their bodies. Secondary data was collected to understand how physical fitness plans can help adults control their diabetes. The younger players are on the grounds, so there must be proper guidance for them to exert limitations. If younger feel that their sugar level is going down, then they must be aware of taking sweets immediately. This can all be done through health literacy and awareness about the prevalence of diabetes.

The old people also face a lot of difficulties in physical exertions because of their joint issues and addiction to rest. It is quite difficult to make old people agree to change their lifestyle, and thus, the data was collected to understand what physical fitness plan can be better for them in terms of the prevalence of diabetes.

Awareness of the Technology

Nowadays, younger adults are very quick to understand information technology. Moreover, they enjoy using the technology devices. In this way, the use of technology devices is not only easier for them but will also be helpful in the prevalence of diabetes. The technology instruments, such as a glucometer, can be used to check the diabetes level of the body, with the help of which the patient can understand better preventive methods. However, old age people are addicted to their manual routines, and thus, they don't understand the use of technology easily.

In this way, the secondary data was collected to analyze how health literacy can guide people to use technology instrumentation to control and check their diabetes levels of the body. The use of technology can help diabetic patients count their calories per day, check the glucose level of the patient's body, and manage their physical fitness plan schedule and meal and medication timing management.

Data Analysis

Initially, a lot of data was collected from secondary sources to understand the impact of health literacy on the diabetes treatment therapy of younger adults and older people. However, after the collection of data, the data was filtered on several bases. Initially, the data was filtered by publication year, and only the data that had been published in recent years was selected. Secondly, the data was filtered by diabetes, and the data was selected only for the health literacy impact on the diabetic treatment of the United States population. Then, data was divided into age groups, including the patient's care, medication, physical fitness, and use of technology. After completing the investigation and gathering useful data from secondary sources, the data was processed for statistical results, and graphs and charts were designed using Excel. The data were double-checked for accuracy because there must not be any chance of negligence or any mistake in the collection of data.

Results and Discussion

Intervention Techniques for the Low Health Literate Patients

According to the statistics, the U.S. population has very limited health literacy, and that is why there must be some interventions for diabetic patients with low health literacy. These interventions will help low-literate people understand the basic health services required for the prevalence of diabetes and manage their daily care. The most important thing for the diabetic patient is to be able to inject insulin properly, read the dosage on the insulin scale, to be able to understand the schedule of checking the glucose level of the body, the diet plan, and the physical exertions required to maintain

the sugar level of the body.

Different intervention techniques can be used to guide diabetic patients about their health care. Some interventions are patient communication techniques, confirmation of understanding, guiding the care process via information technology, and reinforcement of the guidance (Sudore, 2009). It means that the initial point is that the healthcare staff must first ask the patient what he knows about diabetes. In this way, the healthcare staff will understand how much guidance is required for the patient of the prevalence of diabetes. The clinician's initial question to the patient must be, "What do you know about diabetes prevalence?"

Kripalani and Weiss suggested that in this way, the healthcare staff will be able to develop a communication plan that will guide patients on several things. The very first step is to guide the patient about his condition when the sugar level of the body is higher or lower. Secondly, the health care staff guides the patient about taking proper medicines on time or using insulin and setting dosages on insulin pens. Thirdly, healthcare staff must guide the patients on what they can eat normally and what is not good for their health. For this purpose, the guidance chart can be used. Finally, a physical exertion plan can be given to the patients to guide them about their physical exertion plan (Kripalani S, 2006).

Figure 1 Guidance Chart for the Diabetic Patients.

Figure 1 shows the guidance chart for the diabetic patients. In this way, the clinician will guide the patients about how to care for the sugar level in the body. With the help of this chart, the patient will understand how to use insulin, how to use a glucometer to check the sugar level in the body, when should the patient check the sugar level of the body on a daily basis, when the patient consults with the doctor, and when should the patient go for complete checkup of the blood pressure and sugar level.

Figure 2 Food Chart for the Diabetic Patients.

Figure 2 shows the guidance chart for the diet control. Diabetic patients can have guidance on calorie intake from the above chart, and in this way, they can plan a proper diet plan to maintain the calories and sugar levels of their body. However, the chart with pictures can be designed for people who are completely illiterate and cannot read English. Moreover, charts can be drawn to attract younger patients with diabetes. In this way, the children are impressed by the diet plan chart and follow that. One such chart is shown in the figure below;

Figure 3 Food chart for the Younger.

Figure 3 is a food chart for younger patients with diabetes. However, the health care staff also provides an exercise plan to the patients, which allows them to understand how much exercise they

need to do on a daily basis and how many doses of insulin they should take every day. The following figure shows the charts for the exercise plan and insulin dose plan.

Figure 4 Exercise Plan and Insulin Dose Plan for the Diabetic Patients.

With the help of such communication via charts, emails, and free messages, the healthcare staff can make the patients understand the caring and checking process of diabetes prevalence. Such communication plans are really helpful and the best intervention for illiterate diabetic patients. Once the healthcare staff hands over these charts to the patients, they must make sure that the patients completely understand the instructions provided in the charts. In the case of any confusion, the staff must guide the patient about the instructions and the plan suggested by the doctor.

Table 1 Intervention Techniques for the Diabetic Patients with Low Health Literacy.

Clinician- Patient Level					
Patient-Centered Communication	Clear Health Communication	Confirmation of understanding.	Reinforcement	Numeracy and Risk	Medication Reconciliation
What does the patient know?	Slow Down and use plain language	Ask the questions from the patient.	Use different modalities for better understanding.	Use of consistent denominator.	Dose Schedule must be provided
What does the patient need to know?	Keep matching the patient's vocabulary.	Teach back	Use better-written information.	Use absolute risks and a time span of ten years.	Make follow-up appointment plans via computer.

Impact of Low Health Literacy on the Diabetic Patients

The major issue in the U.S. is low health literacy, which causes patients to become unable to understand preventive methodologies for chronic diseases. When patients are illiterate, they don't understand what the healthcare staff has guided them through. They don't understand their appointment schedule, dose intake, and other care and prevention methods. This causes either an increase or decrease in diabetes, and that is why patients can either become the victims of other chronic diseases or may die due to the instability of sugar levels in the body.

Moreover, people who are healthy but illiterate also don't understand the importance of physical activities, diet control, or other preventive measures for diabetes. Especially people who have diabetic genetic issues in families must be careful about their diet and lifestyle and must adopt preventive

measures for diabetes.

Figure 5 Low Health Literacy and Its Impact on Diabetic Patients.

Figure 5 shows how low health literacy has a negative impact on the treatment of diabetic patients. 26% of the patients have no idea about the appointment schedule, 65% of the patients have no knowledge of medication timing, and 75% of the patients have no idea of how to get financial or medical aid for diabetic treatment. Due to this negligence, the patients become unable to control their sugar levels, and thus, it causes high sugar levels in their bodies or causes the death of the patients.

Figure 6 Literacy Level and Sugar Level Awareness.

Figure 6 shows information about low sugar levels and hypoglycemic symptoms in people with low literacy, marginal health literacy, and complete health literacy. People with low literacy levels face a lot of difficulties because they have no idea of the symptoms and preventive methods of unstable sugar levels in their bodies. Thus, this causes an increase in other chronic diseases in diabetic patients, which then leads to death.

Use of Technology for the Diabetic Patients

With the progress of information technology, it is now possible for patients to control their diabetes by using Technology. Different mobile apps or alarming digital systems have been introduced, which help patients manage their diet schedules and set reminders for their medicine time, meal time, and glucose check time.

Figure 7 Technology Use to Maintain Diabetes.

With the help of Technology, patients can now measure the use of calories per day, manage their exercise schedule per day, and keep records of their sugar level and medication intake every day.

Figure 8 Dose adjustment via Technology.

Figure 8 shows how mobile apps or alarms can be used to adjust the insulin dose timing and their records. The Technology will alert the patient at the timing of meal, medication, or insulin dose, and then the patient will never forget the intake of insulin dose timely meal or medication. In this way, the patient will be able to control the diabetic level of the body appropriately.

With the help of Technology, the healthcare staff can also guide diabetic patients and healthy people on the risk factors for diabetes. For this purpose, the healthcare staff can design a chart or alert diagram, which can be emailed to people or sent to social networking websites to alert them about the risk factors of diabetes. A sample has been shared in Figure 9.

Figure 9 Diabetes Risk Factors.

Technology will help patients control their diabetes. Moreover, it will also guide the exercise schedule and proper diet intake of the patients. With such Technology, adults and younger can benefit and manage their diabetes. It has been found that with the proper use of Technology dia, diabetic patients can control their sugar levels within 90 days. The results are also shown in Figure 10.

Figure 10 Sugar Level Controlled by Using Technology.

The figure shows how technology has enabled diabetic patients to control their sugar levels within 90 days. The sugar level was initially at 10.5 A1C, then decreased to 6.3 in 90 days, a normal A1C level of the human body.

Conclusion

The control of chronic diseases is complex, as in the case of diabetes; many treatments and health literacy are required to control the disease. It was seen that some treatments are more effective, but without health education and involvement of the patients, no treatment can produce highly efficient outcomes (Mulrow & Pugh, 1995). Health education means the patient's capability to read out and comprehend curative instructions and make proper choices for the best health results (Ramage-Morin, 2009). Nowadays, there has been a developing concentration on health education because several people are less aware of health education (Zarcadoolas & Pleasant, 2005).

For patients at home, it is important to be well aware of curative instructions and the correct medicinal schedules to be followed. Thus, good interaction among doctors and patients is essential for reliable and fruitful results of curative treatment. Usually, people with less health education have a reading level of fifth grade, but curative instructions are often organized in a way directed to people who can read at a level of tenth grade (Safeer & Keenan, 2005). There is a great difference between the levels of ability needed to realize present medicinal instructions and the certain level of realization in patients with less health awareness. Health education is important for people to completely realize, accomplish, and converse their own health requirements and retain health quality. Furthermore, a scientific analysis explores that less health awareness results in about 3-5% of entire healthcare expenditures, according to an annual report.

There are several chronic diseases like diabetes that require patient literacy for control of illness and to prevent further adverse effects. Patient literacy is also important in recognizing the behavioral deviations that are vital for active participation in the handling of disease and acceptance of diagnosis. (American Diabetes Association, 2017). National Adult Literacy Survey mentioned a deficiency of appropriate reading skills among 46-51% of citizens of the U.S. (Kirsch, Jungeblut, & Jenkins, 1993). It was also noticed by the physicians that 35% of the native English patients lack the literacy abilities to comprehend the literature related to their disease (Williams, Parker, & Baker, 1995). The patients do not recognize the symptoms of lower glucose levels as feeling sweaty, hungry,

and shaky due to a lack of health literacy, and 62% of the patients are unaware of the treatment for this condition.

The problems related to the education of patients with inadequate health literacy cannot be ignored. Patients can be directly involved in the development of educational materials, and this step can empower them to improve their health through effective education with the help of the designed content (Rudd & Comings, 1994).

American Association of Diabetes Educators (2013) established that literacy skills are high for most Americans living with diabetes. According to their report, lack of health literacy has been blamed for creating a vacuum as regards the attitude of most diabetes patients to manage the disease. Previous researchers have identified a positive correlation between health literacy and self-diabetes management. These studies include patient behavior about self-management and have concluded that adequate health literacy is central to achieving diabetic control.

As genetics plays a significant role in the expansion of diabetes, different researchers have exhibited the significance of environmental effects. Patients suffering from diabetes have been presented to have an intense effect on the evolution and improvement of their disease by taking care of themselves. This contribution proves fruitful only if the diabetic patients and physicians are well educated about handling this disease and taking good care of the patient. The American Diabetes Association evaluated the principles of diabetes self-control knowledge and discovered that people who are not well aware of self-management strategies are supposed to face more diabetic complexities than others.

Awareness about diabetes is essential, but the most important thing is to practically follow self-care instructions to help the patient effectively. Self-care actions involve a healthy diet plan, avoiding food with high-fat content, doing routine exercise, checking glucose levels, and taking good care of feet (Glasgow & Strycker, 2000).

The purpose of this study is to evaluate the relationship between health literacy and Diabetes control. The major issue is that there is no cure for diabetes, and the only solution to this problem is to control diabetes by self-monitoring, self-caring, proper medication, monthly basis checkups, and proper exercise. This can only be done by having knowledge about diabetes and its preventive methods. This means that there is a deep relationship between health literacy and diabetes treatment therapy. For this purpose, the research design of the study will use quantitative methodology. This research methodology will be based on the researched material from different resources to understand how, at different times, literature has played a positive role in helping diabetic patients. The major focus of the research is to evaluate whether literacy leaves a positive impact on the prevalence of diabetes or has no impact on it.

The research data was based on four approaches. How does health literacy help diabetic patients control their body sugar and insulin levels? What methodologies should be used to control diabetes for people with low literacy levels? How may health literacy help aged people control their diabetes?

How modern Technology and its awareness may help diabetic patients control their diabetes. The research data was also based on two variables. The variable health literacy is an independent variable because health literacy can be provided to younger, older, and adult people, and it does not depend on anything. The people will be guided to use the information technology tools for the prevalence of diabetes, better physical activities, better diet plans, proper care, and medication to control diabetes. However, the second variable is the prevalence of diabetes, which depends on health literacy and is a dependent variable.

According to the results of the research, the U.S. population has very limited health literacy, and that is why there must be some interventions for diabetic patients with low health literacy. Different intervention techniques can be used to guide diabetic patients about their health care. Some interventions are patient communication techniques, confirmation of understanding, guiding the care process via information technology, and reinforcement of the guidance (Sudore, 2009).

The result showed that by using intervention techniques, such as instruction charts and tables, the clinician can guide the patients about how to care for the sugar level in the body in an efficient way. Thus, the use of intervention techniques is really helpful in guiding diabetic patients with low health literacy about their care and treatment of disease.

The results of this study also showed that low health literacy has a negative impact on the treatment of diabetic patients. 26% of the patients have no idea about the appointment schedule, 65% of the patients have no knowledge of medication timing, and 75% of the patients have no idea of how to get financial or medical aid for diabetic treatment. Due to this negligence, the patients become unable to control their sugar levels, and thus, it causes high sugar levels in their bodies or causes the death of the patients. However, with the help of intervention techniques, proper guidance, and the use of Technology, it is now possible for patients to control their diabetes. Different mobile apps or alarming digital systems have been introduced, which help patients manage their diet schedules and set reminders for their medicine time, meal time, and glucose check time.

The mobile apps or alarms can be used to adjust the insulin dose timing and their records. The Technology will alert the patient at the timing of meal, medication, or insulin dose, and then the patient will never forget the intake of insulin dose timely meal or medication. In this way, the patient will be able to control the diabetic level of the body appropriately. Moreover, it will also guide the exercise schedule and proper diet intake of the patients. With such Technology, adults and younger can benefit and manage their diabetes. It has been found that with the proper use of Technology diabetic patients can control their sugar levels within 90 days.

Conclusively, the research shows that health literacy is an essential element for the better treatment of chronic disease. Without having knowledge about the medication and other intervention techniques, the patient can never take care of himself in a better way. That is why the healthcare staff must adopt some strategies to make people aware of health issues. In this way, people will begin to understand the importance of health and the treatment of chronic diseases.

Potential Social Change Implications of the study:

This study is about the importance of health literacy for the prevalence of diabetes. It means that if healthy people are aware of diabetes, then they must take care of their diet, physical activities, sleeping time, sugar level, and other measures to remain safe from diabetes. Similarly, the diabetic patient may properly use Technology, medicines, diet plans, and physical activity plans to control their diabetes. In this way, the study is of great importance because it provides a great knowledge of how health literacy is important to control diabetes. With the help of this study, the health care and nursing staff will be able to make a plan to make people in the United States aware of diabetes and may take a survey to check how many diabetic patients are still not aware of their diabetes. Such survey plans or healthcare checks will enable the healthcare faculty to guide the people about the prevalence of diabetes and make them aware of diabetes and its effects on life.

This study is important not only for the healthcare and nursing staff but also for the people to understand how health literacy may help them with the prevalence of diabetes. With the help of this study, the people, the health care, and the nursing staff will focus on health literacy and will make people aware of diabetes and other chronic diseases. In this way, the people will be able to understand the importance of health measures and will manage their lifestyles to have a healthy life.

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