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Experiences of self-care in persons with type 2 Diabetes Mellitus

A literature study

Erfarenheter av egenvård hos personer med typ 2 Diabetes Mellitus

En litteraturstudie

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ABSTRACT

Background: One of the most prevalent diseases in the world, type 2 diabetes mellitus is rising every year. Self-care refers to controlling one's own illness to prevent future complications. The nurses' work is oriented on a person-centered approach to inform, promote, encourage, and support the patient to maintain good health in consideration of their circumstances.

Aim: The aim of this literature study was to describe persons' experiences with self-care of type 2 diabetes mellitus.

Method: A literature study based on qualitative scientific articles which were retrieved from PubMed and CINAHL. A thematic analysis was used to analyze the articles. The study's objective was accomplished.

Results: The two main themes were identified. Experiences that affect self-care and Experiences of self-care's impact on life.

Conclusion: Self-care is influenced by several factors such as knowledge, experience of support and control. The self-care and adaptation required for these affects the lives of people with type 2 Diabetes. Nurses have a key role in patients' self-care by helping people manage self-care.

Keywords: Type 2 diabetes mellitus, Self-care, Nursing care, Experience, Nurse's role, Self-management, Person centered care, Diabetes education, Lifestyle

SAMMANFATTNING

Bakgrund: En av de vanligaste sjukdomarna i världen, typ 2 diabetes mellitus ökar varje år. Egenvård avser att kontrollera sin egen sjukdom för att förhindra framtida komplikationer. På grund av detta är sjuksköterskornas arbete inriktat på ett personcentrerat förhållningssätt för att informera, främja, uppmuntra och stödja patienten att bibehålla en god hälsa med hänsyn till sina omständigheter.

Syfte: Syftet med denna litteraturstudie var att beskriva personers erfarenheter av egenvård av typ 2 diabetes mellitus.

Metod: En litteraturstudie baserad på kvalitativa vetenskapliga artiklar som hämtats från PubMed och CINAHL. En tematisk analys användes för att analysera artiklarna. Studiens mål uppnåddes.

Resultat: Två huvudteman identifierades. Erfarenheter som påverkar egenvården och erfarenheter av egenvårdens påverkan på livet.

Slutsats: Egenvården påverkar flera faktorer såsom kunskap, erfarenhet av stöd och kontroll. Egenvården och anpassningen som krävs för dessa påverkar livet hos personer med typ 2 diabetes mellitus. Sjuksköterska har en nyckelroll i patienters egenvård genom att hjälpa personer att hantera egenvården.

Nyckelord: Typ 2 diabetes mellitus, Egenvård, Omvårdnad, Upplevelser, Sjuksköterskans roll, Självhantering, Personcentrerad vård, Diabetesutbildningar, Livsstil

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INTRODUCTION

Type 2 Diabetes mellitus (T2DM) is a chronic condition that, if not properly managed, might result in major health issues and complications. For the treatment of this disease, self-management is crucial.

For some patients, self-care can be difficult, especially when it comes to physical activity and dietary adjustments. The authors began to understand the physiological factors underlying the disease when they trained as nurses. During their time in the work-based education placement (VFU), they had the opportunity to meet patients with diabetes. In doing so, they learned a different perspective on this disease and understood that diabetes is a complex disease.

The authors acknowledged the challenges patients had in managing their disease and comprehending self-care. This literature study will assist the authors to highlight the understanding of patients' with T2DM self-care experiences and how nurses may help to improve the standard of care.

BACKGROUND

Type 2 Diabetes Mellitus (T2DM)

Diabetes is a metabolic disease that affects the body's metabolism and is defined by high blood glucose or blood sugar levels. Gradually this illness can seriously damage the heart, blood vessels, eyes, kidneys, and nerves. It is a chronic disease that causes serious complications (World Health Organization [WHO], 2022a; Afroz et al., 2018; Galicia-Garcia et al. (2020). There are two types of diabetes mellitus, type 1 diabetes and type 2 diabetes which is the most common form of diabetes. Type 2 diabetes (T2DM) arises when the body becomes resistant to insulin or doesn't produce sufficient insulin. In type 1 diabetes, the pancreas produces either very little or no insulin (World Health Organization [WHO], 2022a).

WHO (2022b) estimates that T2DM affects more than 95% of adults with diabetes. Indications may resemble those of type 1 diabetes but are often less noticeable. Thus, the disease may not be discovered for several years after it first manifests, when complications have already occurred. WHO (2022b) states that T2DM was observed only in adults, however it is becoming more common in children. Obesity and an inactive lifestyle are risk factors for T2DM, as well as behavioral and environmental factors that should be taken into consideration (Zhang et al., 2017). According to The National Diabetes Association in Sweden (2022b) recent research indicates that inherited factors account for 90 percent of the risk of developing diabetes.

T2DM is a worldwide health epidemic. According to estimates, 463 million adults had T2DM in 2019, and by 2045, 700 million persons were predicted to have the disease (Galicia-Garcia et al., 2020). In comparison to high-income countries, prevalence has risen more quickly in low- and middle-income nations (WHO, 2022b). In 2021, over 450,000 people were reported to have diabetes in Sweden for both children and adults. The latest statistics were compiled in 2021 and showed that 3,553 people with type 2 diabetes have died (National Diabetes Register [NDR], 2021). According to Afroz et al. (2018), global healthcare spending is expected to reach USD 490 billion in 2030 for the treatment and prevention of diabetes and its related complications.

WHO (2020c) explains the criteria for diagnosing T2DMs value with symptoms are: Random plasma glucose concentration ≥11.1 mmol/l (200 mg/dL). Fasting venous plasma glucose concentration ≥7.0 mmol/l (126 mg/dL). Two-hour venous plasma glucose concentration ≥11.1 mmol/l (200 mg/dL). Two-hours after capillary plasma glucose ≥12.2 mmol/L (220 mg/dL). Hemoglobin A1c (HbA1c) 6.5% (48 mmol/mol) is recommended for diagnosing diabetes. People without symptoms A confirmatory plasma venous glucose measurement are necessary for diagnosis rather than a single glucose measurement alone.

Symptom and treatment

According to WHO (2022a), it is crucial to be aware of risk factors because it may take years for consequences to become apparent before the disease is diagnosed. Symptoms of T2DM include frequent urination, constant hunger, thirst, weight loss, visual disturbances, and fatigue (WHO, 2022a) as well abdominal itching (in women) and repeated urinary tract infections (The National Diabetes Association in Sweden, 2022a). Treatment of diabetes includes lowering blood glucose levels as well as a healthy diet and physical activity (WHO, 2022b).

People with T2DM health condition is significantly influenced by their diet quality. Newly diagnosed T2DM patients are recommended to consume in accordance with dietary recommendations for food types and serving sizes (Burch et al., 2022, p.2). It has been shown that a healthy lifestyle can effectively prevent or delay T2DM and its complications. People should be physically active, i.e., exercise for at least 30 minutes, eat a healthy diet, avoid sugar and saturated fats, and refrain from tobacco use, which increases the risk of diabetes and cardiovascular disease (WHO, 2022b). According to Chatterjee et al., (2017, pp. 2244-2245) explains that Metformin is the first medication of choice for those with T2DM. Metformin, which comes in tablet form, has been demonstrated to lower cardiovascular risk. In addition to Metformin, patients are also given other oral medications to effectively lower and improve glycated hemoglobin (HbA1C) levels. HbA1C is a blood test which shows average blood sugar (glucose) level over the previous two to three months. However, patients who are 18 years or younger can be treated by only Metformin and insulin (Chatterjee et al., 2017).

Complications

The risk of heart attack is higher in people with T2DM than in people without diabetes. When blood glucose levels are high for a long period of time, the vascular wall in the blood vessels is damaged, which is called atherosclerosis. Microangiopathy, the smallest vessels, and macroangiopathy, the large vessels, can cause damage to blood vessels in the legs, heart-, and brain. Because many persons with prediabetes have high blood pressure or raised blood lipids, cardiovascular illness is more prevalent when T2DM is diagnosed (The National Diabetes Association in Sweden, 2022).
Neuropathy (nerve damage) often results in decreased sensation, which can make it difficult to recognize an impending injury. Impaired blood circulation can make wounds or damage to the skin harder to heal. To avoid complications, it is important to take self-care of feet and perform foot examinations (The National Diabetes Association in Sweden, 2022).

Diabetic retinopathy can cause loss of vision diabetic patients. The retina of the eye is affected. In other words, the retina's tiny blood vessels alter and thicken. Thus, it becomes more difficult for oxygen to reach, and new blood vessels form to compensate for the oxygen deficit. When the retina is photographed, small yellow spots can sometimes be seen as a result of protein substances from the blood

leaking through the vessel wall. Visual changes can result from leakage of protein substances, new vessels, and oxygen deprivation. Regular eye examinations with fundus photography are necessary (The National Diabetes Association in Sweden, 2022).

Diabetes Nephropathy, or kidney damage, occurs when blood glucose is elevated for a prolonged period. The most serious damage occurs to the small bundles of blood vessels that filter the fluid that is recycled or forms urine. When the vessel wall is damaged, proteins leak into the urine. If this continues, the performance of the kidney may deteriorate (The National Diabetes Association in Sweden, 2022). An estimated two million people died in 2019 from diabetes-kidney damage related (WHO, 2022b).

The nurses' role and responsibilities

The nurse's contribution to the patient's self-care is essential. The nurse is responsible for making sure that their patients receive the assistance and care they require when they need it. Nurses' ought to be considerate of a patient's privacy and information. The ethical and secure handling of patient data is the responsibility of nurses (Swedish Nursing Association, 2021). Using a person-centered approach, nurses should be able to discern between the disease and the patient's experience with the condition in order to find preventive care and health promotion strategies that are better suited to the patient's environment (Amorim et al., 2019, p. 459). T2DMs person-centered care is linked to enhanced self-care and disease knowledge. The nurses must ensure that the nutrition, physical activity, and medication were discussed as part of an efficient self-care education.

During diabetic health education, it is crucial for a nurse to support both the patient and any family members or caregivers who may encourage the patient and help with self-care and psychological adaptability. The nurses' role is crucial for ensuring that patients with diabetes are competent and adhere to long-term self-care management (Awang Ahmad et al., 2020). Nurses' efforts to promote good self-management of the condition center on communication. In order to provide person-centered support, it is critical that communication is based on a thorough grasp of each patient's disposition and circumstances. The ability to empathize with patients and comprehend their perspectives are essential, but these traits must be reinforced by clear, efficient methods for goal setting and management planning (Hall & Tolhurst, 2020).

According to Robertson (2012), for patients to successfully modify their lifestyles continuously, nurses' support with interventions is crucial. It is crucial for nurses to maintain patient care by following up with them in addition to using a variety of ways to assist patients. Nurses must make sure that their interventions are individualized to the patient, family, and healthcare team. Additionally, it is necessary for nurses to be aware of the difficulties patients have when adopting and maintaining treatment plans and lifestyle modifications, as well as the information patients need to do so (Robertson, 2012).

Theoretical framework

Orem's theory is called Self-care deficit nursing theory (SCDNT), Orem started conceptualizing this model for nursing in 1959 and it's been developed over time (Orem, 2001, p. 21). An ability to perform self-care, to rest, maintain activity and social interactions is the base of SCDNT. Orem describes the theory as a combination of three theories. The theory of self-care, the theory of self-care deficit and the theory of nursing systems (Orem, 2001, p. 22-25).

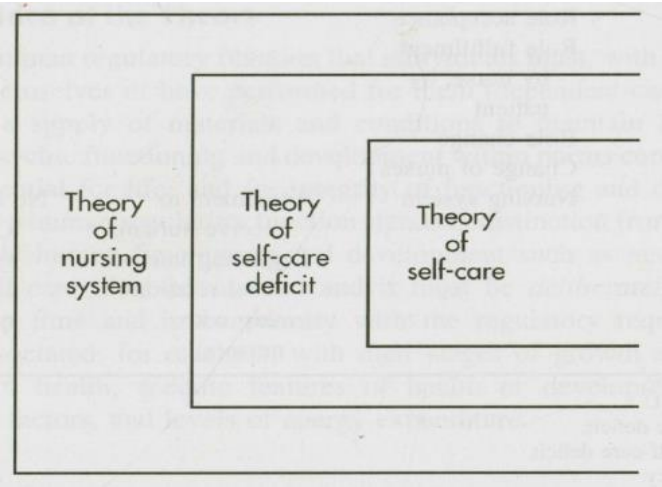


Figure 1. Orem (2001, p. 141) This diagram shows the combination of the three theories that is SCDNT.

The theory of self-care

Orem (2001, p. 136-158) explains in the theory that self-care is something that an individual needs to learn and perform voluntarily, and that it is an activity to attend to one's individual health. A human's potential of self-care is affected by several factors such as socio-economic status, health status, social networks, maturity and lifestyle. These factors are the foundation of the individual's conditions of opportunity to be able to perform and take part in their self-care (Orem, 2001, p. 136-158).

The theory of self-care deficit

Orem (2001, p. 136-158) explains in the theory of self-care deficit why the person is in need of nursing. The self-care deficit occurs when the needs exceed the person's capacity for self-care and therefore the individual ability to meet the requirements is limited.

The theory of nursing system

Orem (2001, p. 136-158) describes that the theory of nursing systems includes both the theory of self-care and the theory of self-care deficit. The theory describes and structures the premises of the nursing process. The nursing system helps and supports the patient's capacity to self-care and to lessen the self-care deficit which helps and supports the individual's requirements of self-care. These systems can be tailored for different individuals and groups (Orem, 2001, p. 136-158).

Problem statement

Throughout the world, type 2 diabetes (T2DM) is a common chronic condition. The usual causes of this condition are a combination of lifestyle choices and hereditary factors. For patients with diabetes, self-care is crucial to control the disease and in prevention of further complications. The nurses must thoroughly understand and address the patient's experience of self-care.

AIM

The aim of this literature study was to describe persons' experiences with self-care of type 2 diabetes mellitus.

METHOD

Design

This literature study contains scientific articles using a qualitative research approach to gain a deeper understanding and insight into the topic. In qualitative studies, analysis, and collection of data in which discussions and observations are structured as well create an understanding within the research topic (Polit & Beck, 2020, pp. 91-93).

Selection

Based upon the purpose of the study, the selection of the articles search is implemented with inclusion and exclusion criteria to identify relevant research (Polit & Beck, 2020, p. 362). In inclusion, the articles would be about experiences of self-care in persons with T2DM. The articles should be thoroughly researched to gain a deeper knowledge of how people with T2DM experience the need for self-care. For the purpose of keeping the knowledge up to date, the articles would be generated in English and released between

2012 and 2022. The articles would be based on qualitative research to learn more in-depth about the experiences and self-care of the patients. All articles would also undergo scientific review, generally known as peer review. In exclusion, review articles weren't included since they only used primary sources, and because they only focused on one specific aspect of the subject. articles that are written from the viewpoint of nurses or relatives.

Data collection

To gain a more complete overview of the study, this study followed the flow of activities according to Polit and Beck (2020) as a guide.

Table 1. The flow of activities in a qualitative study (Polit & Beck, 2020, pp. 90-95)

Step 1 Formulate the purpose and identify the problem	**Step 2** Selection of databases, developing strategies for collecting data and use of relevant keywords	**Step 3** Search of articles, collecting data by using keywords from the database
Step 4 Relevant articles are reviewed, abstract and construct	**Step 5** Read and understand selected articles	**Step 6** Summarize the articles by understanding the purpose
Step 7 Analysis and review articles	**Step 8** Selected articles are analyzed	**Step 9** Preparation of discussion and result of the articles

After the purpose of the study and the problem area were formulated (**step one.**) The databases and keywords were selected. These keywords were chosen with the help of The Cumulative Index to Nursing and Allied Health Literature [CINAHL] and Public/Publisher MEDLINE (NLM journal articles database) [Pubmed] to suggest subject terms. Through these databases, relevant keywords were selected. The search limitations of the articles were published within eleven years 2012-2022, English language, full text, and peer reviewed (**step two.**) The scientific articles were searched by using two different database search engines: CINAHL and Pubmed. The words used for the search can be seen in table 2. The authors changed the search words after the search in CINAHL due to a lack of articles found, (**step three.**) A search matrix (Table 2) was created with the articles for this literature review to obtain the relevant information for the study. Furthermore the "similar articles" function on pubmed was used to find other articles fitting the aim of the study. Authors read and evaluated each abstract from the retrieved articles (**step four.**) The related articles were read in full text (step five), and the data was thoroughly

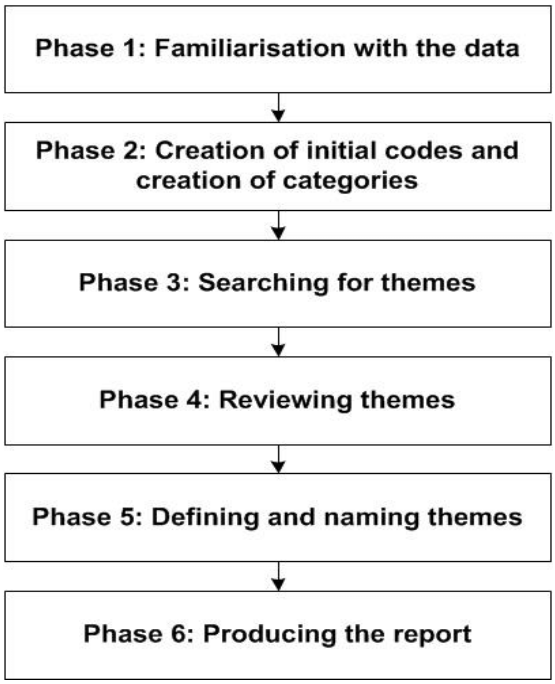
documented and noted for additional study (**step six.**) In **step seven,** to make sure the articles were accurate for the research study, a quality evaluation of the chosen articles was assessed and critiqued. In a search matrix, the data collection's findings were summarized (*table 2*). The search showed various numbers of articles and irrelevant articles were eliminated. The qualitative research studies were used by the checklist from the assessment to evaluate patients' and clients' perspectives (The Swedish Agency for Health Technology Assessment and Assessment of Social Services [SBU], 2016). An appendix with a quality assessment checklist is provided below (Appendix 1).

Table 2: Search matrix

Database and date	Keyword	Boundaries	Number of hits	Number of abstracts read	Number of articles read	Number of items selected
CINAHL 04 Nov 2022	Diabetes type 2 AND nurses AND lifestyle	Time interval: 2012-2022, English, full text, Peer-review	318	64	11	2
	Diabetes type 2 AND self care AND diabetes education	(same as above)	156	16	8	0
Pubmed 08 Nov 2022	(("diabetes mellitus, type 2"[MeSH Terms]) AND ("patient experience"[Title/Abstract])) AND ("self-care")	Time interval: 2012-2022	7	1	0	0
	("diabetes mellitus, type 2"[MeSH Terms]) AND ("patient experience"[Title/Abstract])	(same as above)	54	6	0	0
14 Nov 2022	"Diabetes Mellitus, Type 2/nursing"[Mesh]	(same as above)	288	19	9	2
	(("daily life") AND ("type 2 diabetes")) AND ("Self management")	(same as above)	54	4	4	3
14 Nov2022	Taken from similar articles			7	7	3
Total number included				118	38	10

Data analysis

For the future discussion regarding the literature study's objectives, all analysis of the literature research is condensed into one result (**step eight and nine.**) To better understand the purpose of the study, each article was thoroughly studied. To determine the objective relevant to the literature study, a thorough discussion of the articles' substance was conducted. In order to fully comprehend each article, a matrix table with "authors and date, title, purpose, method, results" was created, as shown in Appendix 2. The method of analysis for the literature study was chosen. Braun and Clarke (2006) define thematic analysis as a technique for qualitative data analysis that recognizes, analyzes, and documents recurrent patterns. This method describes the data as it is being used to create themes and codes. The collected data was therefore approached using this methodology.



Thematic analysis, which is explained as a six-phase procedure for coding, data engagement and theme development, was used to analyze the selected articles. In the first step, selected articles were read carefully, and ideas were taken down. Codes pertaining to patients' self-care experiences with T2DM emerged as key elements in the second step. Initial themes were produced in the third stage using the coded and compiled data. The fourth step, the codes that were studied were used to build several themes. It involved developing and reviewing the themes in the best possible way to align them with the current literature study. In the fifth step, themes were generated and defined (*table* 3). For further evaluation, these themes were noted and encoded in the final phase (step six) before writing the report (Braun & Clarke 2021, pp. 331- 332).

Table 3: example of coding process

Article	Meaning bearing unit	Code	Sub Theme	Theme
Wu et al., (2019)	The long-term implementation of these self-care behaviors and the acceptance of strict limitations in life place a heavy psychological burden… with diabetes.	Limitation and acceptance of self-care adoption places a burden on life	Lifestyle changes	Experiences of self-care impact on life
Bernhard et al (2017).	A rigid medication regimen was perceived to challenge living a normal life.	Medication regimens affect life	Medication	Experiences of self-care impact on life

Ethical aspects

According to the Belmont Report, there are three principles for ethical conduct in research. These are: respect for human dignity, act of kindness or mercy, and equal justice (Polit & Beck, 2020, pp.193-198). The outcomes of the chosen articles were used to conduct this literature study. To better comprehend the study, every article was thoroughly read and discussed by the authors. From an ethical standpoint, this study's utilization of scientific articles that had undergone peer-review. All articles reported were approved by the ethics committee. In addition, to avoid plagiarism for this study, correct references have been used and the author's own words have been adopted as far as possible without changing the sense of what was said. According to Polit and Beck (2020, p.212), ethical behavior in research places a higher priority on integrity and avoids any type of research misconduct including plagiarism, fabrication and falsification.

RESULTS

The results of the literature study are based on ten scientific articles. The purpose of the study was to describe patients' experiences with self-care of type 2 diabetes mellitus. The scientific articles were qualitative approaches from Sweden, Norway, Netherlands, Haiti, Germany. The main themes and subthemes that were chosen for the results were: Experiences that affect self-care (subthemes: experiences of support and knowledge) and Experiences of self-care's impact on life (subthemes: medication and lifestyle changes) (*table 4*). The themes correlate but are different in the aspect that one acknowledges that experiences of self-care adaptations affect a person's life and that a person with T2DM experienced factors that affect the self-care.

Table 4: Themes and Subthemes

Themes	Subthemes
Experiences that affect self-care	1. Knowledge and information 2. Experiences of support 3. Experiences of control
Experiences of self-care's impact on life	1. Lifestyle changes 2. Medication and blood glucose control

Experiences that affect self-care

The most common factors influencing the self-care in these findings under this theme and subthemes were to describe patients' knowledge, and deficient support. For the majority of patients, being diagnosed with T2DM is physically and psychologically stressful for most patients.

Knowledge and Information

According to Herre et al., (2016), many participants experienced that they gained more distinct and specific knowledge about living with T2DM by participating in a diabetes self-management course. They

also felt that it was encouraging to learn in a context together with other people struggling with similar demands (Herre et al., 2016, p. 385). The participants experienced that gaining more knowledge was essential to be able to manage the disease in their everyday life. The participants gained knowledge about various blood glucose-regulating drugs. Others who had not started using oral drugs or insulin did not find this information to be useful (Herre et al., 2016, p.385). The diabetic self-management course, they felt, had given them fresh self-care ideas through the contributions of medical professionals, other participants, and persons with diabetes.

It was simpler for participants to manage the disease because their theoretical comprehension of it had increased, and because they had reinforced their practical readiness in terms of taking blood glucose readings, giving injections, and controlling diet. After learning how serious diabetes was and how to control it, they felt more secure (Herre et al., 2016, p.385). They become more knowledgeable about what occurs in their bodies in reality. The participants in the diabetic self-management course found the information on a variety of late complications to be quite helpful. Theoretically, the participants now have a better grasp of how various factors, such drinking alcohol and diseases can affect blood sugar levels.

Herre et al., (2016) explains further that many participants reported an improvement in their theoretical comprehension of the advantages of physical activity for controlling blood glucose and diabetes. The participants felt safer as a result of learning new disease-coping techniques. The participants found it easier to maintain their diet control after learning more about the components of various food types and how various food items affect blood glucose. Practical advice about mealtimes, size and consistency of a meal was positive. The participants who brought their spouses to the course thought that both partners receiving the same information about nutrition was useful (Herre et al., 2016, p.386). Knowledge and information played a significant role in how people practiced self-care (Fink et al., 2019 & Herre et al., 2016). When a person is diagnosed with diabetes, they must learn a lot about self-care activities, including knowledge about adaptations in life, such as physical activity, nutritional needs and how medications are used (Fink et al., 2019). To cope with these adaptations, knowledge and routines were required (Bernhard et al., 2017; Fink et al., 2019; Herre et al., 2016 & van Smoorenburg et al., 2019).

Ahlin and Billhult (2012) mentioned in their study that participants' knowledge and behaviors changed, and it was discovered that when knowledge increased, denial may follow, which could then be used to justify or avoid doing anything. Information and knowledge were provided by self-help groups, healthcare professionals, the Internet, patient education and from friends and family. Haitian immigrants who have not received formal diabetes education may have seen variations affected in the efficacy of self-care (Magny-Normilus et al., 2020). The internet was seen as an easily available source of knowledge, however there were questions about its reliability and quality. People found it difficult to comprehend and assimilate information on medications (Bernhard et al., 2017). Blood glucose meters provided useful information about diet and the amount of insulin required (Nugent et al., 2015). It

appeared that the personnel failed to ensure that the information was understood, and that the information was given in a way that "should suit everyone" rather than by adapting it to the individual's knowledge and needs. This could have resulted in a person's understanding of how to properly care for themselves at home (Bech et al., 2019). Although doctors were seen as the most reliable source of knowledge on medications, this information was not always provided, particularly when it came to adverse drug-drug effects (Bernhard et al., 2017).

As stated by Fink et al., (2019) and Ribu et al., (2019), people acknowledged a lack of information regarding how and what to consume, as well as their perception of a lack of knowledge about their illness. Although people had the information to make these changes in their lives, they either lacked the methods to do so or tried to make them but quickly reverted to their old habits (Ribu et al., 2019). The study by Wu et al. (2019) revealed that traditional Chinese medicine was regarded as natural whereas Western medicine was recognized as toxic, which may have reduced the use of self-medication. Some respondents found the study by Bernhards et al. (2017) to be difficult because of their limited language skills and the variety of medicines brands and names. Life is impacted by diabetes, and several factors have an impact on both managing the condition and adjusting to living with T2DM (Fink et al., 2019). One of these factors was the potential dread that persons with T2DM would experience as a result of knowing what diabetes was and what would happen if it was not treated properly (Fink et al., 2019 & Herre et al., 2016). Some people sought the least number of limitations by effective disease management, which required knowledge from healthcare professionals or self-education (Fink et al., 2019).

Experiences of support

People expressed that support or the lack of support from others was a factor which was affecting T2DM's self-care (Ahlin and Billhult, 2012; Bech et al., 2019; Berhard et al., 2017; Fink et al., 2019; Herre et al., 2017; 2019; Magny-Normilus., 2020; Ribu et al., 2019 & van Smoorenburg et al., 2019). Some people expressed their positive experiences of self-care support from relatives, for instance help with taking or shopping for medicines (Bech et al., 2019; Bernhard., 2017 & van Smoorenburg., 2019). There were also negative experiences of support from relatives, this could be experiences of relatives being too fussy and complaining or relatives not wanting to change their eating habits (Alhin and Billhult., 2012; Bech et al., 2019; Bernhard et al., 2017; Ribu et al., 2019 & van Smoorenburg et al., 2019). Some individuals did not consider themselves as ill, which may have prevented their informal network from considering them to be in need of support (Bech et al., 2019).

The importance of receiving adequate treatment from medical professionals was emphasized (Bech et al., 2019; Bernhard., 2017 & Herre et al., 2017). Many individuals mentioned having favorable interactions with the support of medical personnel (Bech et al., 2019; Bernhard., 2017 & Herre et al.,

2017). People indicated that in order to feel supported by medical personnel, there must be a sincere interest in their health, relaxed jargon, sufficient time, and consultation without criticizing (Bech et al., 2019; Brobeck et al., 2014). Several persons described negative experiences with the support of self-care, despite the fact that it was seen to be of utmost essential to have the support from healthcare experts, and often persons experienced the opposite of the of what they needed to be supported (Bech et al., 2019; Bernhard et al., 2017; Brobeck et al., 2014; Magny-Normilus., 2020 & Ribu et al., 2019). People stated that conducting self-care duties presented a significant burden due to the healthcare system and its workers (Bernhard et al., 2017). Magny-Normilus. (2020) explains medical personnel showed a lack of sensitivity and understanding to cultural variation. According to Ribu et al. (2019), people expressed that they changed their general practitioner (GP) if they felt that they did not receive enough support from it because they did not believe that healthcare workers were compassionate or competent. People who receive inadequate help from healthcare professionals may begin to doubt their need for consultation and believe that they can only offer medical advice and are unable to support themselves with daily self-care (Bech et al., 2019 & van Smoorenburg et al., 2017). It was evident that people sought help from other sources in addition to family members and healthcare professionals (Bernhard et al., 2017; Magny-Normilus., 2020). People believed that God was a powerful support in managing their diabetes, but they also thought that religious organizations could be helpful (Magny-Normilus., 2020). Support from people who have experienced T2DM themselves was beneficial. The Internet, self-help groups, and groups facilitated by hospital professionals were all useful resources (Bernhard., 2017; Herre et al., 2017). Many people who felt supported and those who did not, thought that managing the disease was ultimately their responsibility.

Experiences of control

Several people said that self-confidence and control over their own situation affected self-care (Alhin and Billhult. 2012; Bernhard et al., 2017; Fink et al., 2019; Magny-Normilus et al., 2020; Nugent et al., 2015; Ribu et al., 2019; van Smoorenburg et al., 2019 & Wut al., 2019). People had different views on whether events that affected their self-care were within their control or beyond their control (Bernhard et al., 2017; Fink et al., 2019; Nugent et al., 2015 & Ribu et al., 2019). People's ability for self-care was impacted by comorbidity, complications, age, and heredity, and this was viewed as being outside of their control (Fink et al., 2019; Nugent et al., 2015 & Ribu et al., 2019). Routines are necessary for managing daily self-care, and people utilize schedules to feel in control of their circumstances (Bernhard., 2017; Fink et al., 2019; Ribu et al., 2019 & van Smoorenburg et al., 2019).

Control over one's ability to take care of oneself was found to be negatively impacted by disruptions or changes in daily routine or disease image (Bernhard et al., 2019 & Nugent et al., 2015). Despite the fact that many people are aware of the lifestyle adjustments necessary to manage their self-care, they nevertheless identified reasons outside of their control to avoid practicing it, such as the surroundings or

their daily lives at home (Alhin and Billhult., 2012 & Ribu et al., 2019). Some women tended to prioritize their family over their own needs (Alhin and Billhult., 2012). Patient training was challenging to arrange and fit into the day, and those who work full-time had much more trouble (Fink et al., 2019). Those who worked found it challenging to measure their blood sugar levels; they instead learnt to rely on physical experiences (Wu et al., 2019). People who made the decision to exclude their informal network were accustomed to solving their own difficulties and had a high level of self-confidence (Bech et al., 2019 & Magny-Normilus., 2020) People who had a strong faith in God for guidance with self-care were seen to have a strong external locus of control (LOC) in addition to their internal LOC were identified in Magny-Normilus' (2020) study. People claimed that spirituality was a key resource for coping and maintaining self-care (Magny-Normilus et al., 2020).

Bernhard et al., (2017) points out that patients without consulting their doctors, some who fasted during Ramadan (month of fasting observed by Muslims) stopped taking their medications. The social setting had an impact on self-care as well, as people shared their stories of struggling with self-control (Wu et al., 2019). Many people said they desired they had more power over the choices made for their own self-care (Bernhard et al., 2017).

Experiences of self-care's impact on life

The result in this study showed that self-care has an impact on life. This theme and its sub themes were created to describe how diabetes has impacted and affected patients.

Lifestyle changes

Diabetes has an impact on daily life, and lifestyle adjustments are necessary. Ribu et al. (2019) gives the example of how to prevent temptation by establishing rules about what is and isn't allowed in the home. Furthermore, it is clear that self-care adaptation is a lifelong process as circumstances alter over time (Ribu et al., 2019). People with diabetes may experience significant psychological stress when making long-term lifestyle adjustments (Wu et al., 2019). In the study by Fink et al. (2019), it is evident that some of the participants adhere carefully to the suggested routines and can describe in detail how they applied this in their lives, even if they perceived more challenges than possibilities in their lives. According to Van Smoorenburg et al. (2019), the experience of the new way of living changes over time and is perceived as a usual aspect of daily life rather than active self-care. Van Smoorenburg et al. (2019) explains further that patients' acceptance of diabetes and the new lifestyle was impacted by the realization that diabetes had a significant impact on day-to-day activities.

Some patients struggle both inside and externally, believing they are victims of the illness and unfairly treated by life. Both psychologically and physically, they found it difficult to cope with daily tasks. Additionally, patients mentioned in social interactions that it was difficult to share meals with close relatives because the food options were unsuitable for those with diabetes (Ahlin & Billhult, 2012, pp.42-45). They further described that they were moving more and more towards their unhealthy habits. This pressure to change lifestyle results in many patients being overwhelmed (Ahlin & Billhult, 2012, pp.42-45). Cultural aspects seemed to have an effect on the experienced impact that lifestyle changes have on life (Wu et al., 2019). People expressed that lifestyle changes could isolate them from social groups (bech et al., 2019).

Ahlin and Billhult (2012, p.45) highlights that many participants spoke of feeling empty, as if life had no purpose if it couldn't be lived normally. The demands for a change in lifestyle produced significant friction in their lives because they wanted to enjoy life. People not self-managing T2DM appropriately experienced negative feelings of death, deterioration in quality of life, guilt, and anger (Herre et al., 2016; Nugent et al., 2015 & Ribu et al., 2019). When diagnosed with diabetes people experienced a change in health values and sense of regret for not caring for themselves earlier (Nugent et al., 2015).

Medication and blood glucose control

Living with T2DM implies a change in lifestyle, which includes taking medicine and monitoring blood sugar levels on a regular basis for those with T2DM (Wu et al. 2019). Middle-aged and older persons with diabetes must deal with a great deal of psychological stress due to these adaptations as well as restrictions brought on by the lifestyle changes covered under the subtheme "Lifestyle Changes" (Wu et al. 2019). According to Bernhard et al. (2017), a strict medication regimen makes it difficult to lead a normal life. Additionally, because they have a chronic illness, they are required to take their medications, which has an impact on their ability to make decisions and exercise personal control over their self-care. This is supported by Fink et al. (2019), who hold that T2DM affects both your personal and professional lives and that self-care is a major challenge in daily living when the use of medicine requires lifestyle adaption. The study by van Smoorenburg et al. (2019) demonstrates that one of the factors affecting daily life with T2DM is the medicine.

People felt the need to adjust their daily schedules to accommodate this due to the adjustments of life, the requirement to control blood sugar levels, and the consumption of medications (van Smoorenburg et al. 2019, Bernhard et al. 2017). However, it was evident that keeping an eye on blood sugar levels could provide people a sense of control, giving them a chance to safeguard themselves against potential issues and maintain their quality of life (Nugent et al. 2015). Guilt could develop when monitoring blood glucose levels was impossible for financial reasons (Fink et al. 2019). After experiencing a hypoglycemic attack, some of the participants learned the value of checking their blood sugar levels (Nugent et al.

2015). Changes in medicine or when medication started to have an impact on day-to-day life were viewed as challenges, especially the worry about adverse consequences that in turn resulted in emotions of uncertainty and/or loss of control (Bernhard et al. 2017). The feeling of losing control might be brought on by medication adjustments, according to Nugent et al. (2015).

DISCUSSION

Discussion of methods

This literature study aimed to describe the experiences of self-care in persons with T2DM. As a result, the authors decided to use scientific articles to achieve better understanding of this current study. In this method discussion, it is discussed how all of the selected articles are entirely based on original research and qualitative studies. The authors of this study based their work on the results of each chosen article. They identified categories and links between numerous articles using this technique. There are suggested criteria for increasing trustworthiness in studies, which are credibility, dependability, confirmability, and transferability (Lincoln & Guba, 1985, referenced in Polit and Beck, 2021, pp. 787-789). Based on these concepts, a discussion of the advantages and disadvantages of the literature study followed.

The approach authors used for this study has been carefully reviewed. To strengthen the credibility of the study the authors followed Polit and Becks. (2020, pp. 90-96) flow of activities shown in their nine-step model. To increase confirmability and dependability and create a clear understanding of the work process the authors carefully documented the process. This process made it possible to answer the aim of the study. According to Polit and Beck (2020, p.788), The study must be carried out in a way that strengthens the credibility of the results and takes actions to show dependability in research reports.

In order to find articles on all relevant subjects, keywords and manual searches using the function similar articles were used to search databases. The search of articles was conducted using CINAHL and MEDLINE [Pubmed] databases. The use of manual searches was of significant use in finding relevant articles due to the lack of relevant articles found in the block searches. Polit and Beck (2020, p.138) mention that CINAHL and Pubmed are useful databases for nursing researchers where a variety of articles can be found. To find relevant data, a data search was conducted based on the study's inclusion and exclusion criteria. This literature study's design, selection, and data collection are all documented in thorough in order for other researchers to reflect them.

A search matrix was created which included the date, database, keyword, boundaries, numbers of articles found, and numbers of articles that were read and used helped to increase the confirmability of the study. To ensure that the study's findings are supported by up-to-date research work, the time frame

of the articles that were chosen was restricted to 2012–2022, this time constraint may have resulted in missing relevant articles (or information). To improve the likelihood of finding articles, certain keywords are implemented. One disadvantage was the lack of available article publications in the databases. Due to a lack of deficient access, a large number of the retrieved articles were not fully accessible. The result of the study might be affected by the usage of different search words in the different databases. The changed search words that were used in Pubmed generated a bigger pool of relevant articles which helped the study and reached a better data saturation. The argument could be made that the change of search word should also have been used in CINAHL, though the authors believed that the searches conducted yielded enough articles meeting the criteria of the study. Polit and Beck (2020, p. 88) explained that a change of search strategies could be needed in the different databases.

The result consists of ten articles, the size of the study could affect the transferability, Polit and Beck (2022, p. 278) shows that transferability is affected by the saturation of data. The articles analyzed in the study originated from Sweden, Scotland, Denmark, Taiwan, Norway, Germany, United States, and Netherlands. Transferability is the ability of discoveries to be applied to or transferred to different contexts or groups (Polit & Beck, 2020, p.789). Because the authors wanted to have a global view and did not restrict the geographic context during data collection. The literature study's findings included diabetes which is a chronic disease that affects people all around the world. The fact that articles were used from multiple countries were utilized to demonstrate transferability. Only primary adhered to ethical standards and had received ethical approval when taking ethical considerations into account and enhanced the credibility and the dependability of the study.

With the selected articles the authors conducted a thematic analysis as part of the data analysis, which was followed by a six-phase process for coding, data engagement, and theme development. When analyzing the articles chosen for the study Braun and Clarke (2006) six-step thematic analysis (TA) was used to find themes and create a result. The usefulness of TA lies in its flexibility and is a good stepping stone method which was important to the authors, hence choosing a simpler method strengthened the quality of the study (Braun and Clarke, 2017). An account to the approach of the data analysis enhances the confirmability and dependability of the study. When evaluating variable assessment methods, confirmability is a crucial aspect to take into account. It is emphasized that different experts should evaluate and analyze the information objectively in order to offer a suitable interpretation (Polit & Beck, 2020, pp.788-806). The articles were read several times, to ensure understanding of the articles. One disadvantage when analyzing the articles was the language barrier of one of the authors, though this was countered in that one of the authors did not suffer from this barrier and made sure that the articles were interpreted accurately. The advantages of reading articles were gaining a thorough understanding of T2DM self-care from participants' perspectives and their viewpoints. This lowers the possibility of bias, which was thought to affect the study's confirmability. To enhance the credibility and confirmability of the result, the authors discussed their codes, possible sub themes and themes whilst also checking the reliability

during the analyzing process. An example of the coding process was shown in table 3 to increase the dependability of the study. The result consists of two themes and five subthemes and the authors believe that the approach and the usage of Polit and Beck (2020, pp. 90-96), flow of activities and the model for thematic analysis (Braun and Clarke, 2017) to produce a trustworthy result that answered the aim of the study.

Discussion of results

The purpose of this literature study was to describe experiences of self-care in persons with T2DM. The results discussion will be focused on the themes and subthemes of the current study (*table 4*). First theme: Experiences that affect self-care with three subthemes; experiences of support, knowledge and experience of control. Second theme: Experiences of self-care's impact on life with two subthemes; medication and lifestyle changes. Since self-care was the primary focus of the study, the discussion is based on Dorothea Orem's Self-Care Deficit Nursing Theory (SCDNT), the background, new literature and reflections from the authors. According to research, more people are having diabetes and are not aware of its complications or how to take care of themselves in a way that would limit its long-term effects. The themes are closely related but differ in the sense that the experiences affect different aspects. The correlation of the themes and how the themes correlates was shown in Ahlin and Billhult's (2012, pp.42-45) study explained that the factors of self-care adaptations that had an impact on life, could then have negative effects on self-care. The correlation between these two themes was something the authors argue was something to take into consideration when working with people needing to adapt to the increased level of self-care in life. This was also one of the reasons for keeping these two themes even though they are closely related.

Knowledge played a significant role in the result because lack of knowledge might have a negative impact on one's ability to take care of oneself. The result indicated how having knowledge about how to take care of oneself is important after receiving a diabetes diagnosis. The use of Knowledge and learning is according to Orem (2001, p.268) a prerequisite in the ability of performing internal or external self-care actions. Due to T2DM, numerous life adaptations were necessary, and education was required to make these adjustments effective. Since the self-care required to treat diabetes is challenging to sustain and treatment regimens can be complex, it was thought crucial to educate patients as soon as they were diagnosed with the disease (Robertson., 2012). Knowledge affects the understanding a person needs to understand the meaning and value of self-care to make reasonable and rational self-care decisions (Orem, 2001, p.272). Furthermore, Kugbey et al. (2017) explains that a patient's knowledge about diabetes predicts the self-care practices. The results highlight that knowledge and behaviors might differ, and that knowledge may create obstacles to self-care. The outcomes illustrate that individuals consult a

variety of sources while learning new things, and although the internet was thought to be an easily accessible information source, its reliability was questioned. People desire a more centralized source of information, according to Savage et al. (2009). When Self-care is needed for the promotion and maintenance of health, people need scientifically based knowledge about self-care goals and practices, related skills and habits (Orem., 2001, p.46). It is clear from the result that people had difficulty comprehending and processing medical information. The findings revealed that immigrants from Haiti had low knowledge of diabetes; this was thought to have implications for self-care. Attridge et al. (2014) study shows that health education appropriates to culture had a positive effect on self-care.

In the results, it was seen that negative experiences of support made it more difficult to perform self-care. The result illustrates that close relatives can be excessively pushy when it comes to care, and families could show a reluctance to change their dietary habits. Similar experiences can be seen in the Mayberry and Osborn's (2012) study, where a lack of support from the family caused frustration and some persons shared that relatives tried to sabotage self-care behaviors. The results also showed positive experiences of support from relatives where people received help with their medications. The results showed the importance of healthcare professionals (HCPs). Orem (2001, p. 349) describes that the nurse's role is to be a teacher in various methods to help patients so that they can meet the need for self-care. The results showed both positive and negative experiences of the support they received from HCPs. The results showed that HCPs could be a big challenge in self-care. The results showed that patients experienced positive meetings where they felt adequately supported, but often experienced the exact opposite. Negative feelings towards the treatment received by HCP is supported in Nikpuor et al. (2022) study, furthermore it is described that people suffered from lack of psychological support. Orem (2001, pp.349-353) explains that the interaction between nurse and patient is important for self-care (Nikpuor et al., 2022). The result shows that HCP lacked understanding of cultural differences. In the results, it was explained that people looked to groups other than relatives or HCPs, people looked to different communities and support from others with similar experiences were important in self-care.

The results suggest that patient motivation and dedication for self-care management and its education were influenced by knowledge. Education about diabetes management improved patients' knowledge levels and encouraged them to create quality lifestyle changes. Patients have the chance to talk with others about the disease and learn how to deal with the circumstance during their numerous training sessions. The patients' capacity to learn self-care was improved through interactions. The result in Juarez et al. (2022) supports this and explains that diabetes education increases the activities of self-care. The results indicated that patients' encouragement is expressed by an individual's tendency to encourage self-care in T2DM. The willingness of patients to provide for themselves and the support of their family members and healthcare professionals are both strengthened by this purpose.

The results illustrate that the adequacy of self-care is affected by LOC, people with high internal LOC felt that they were responsible for their self-care. In the result we could also see that people with external LOC felt that self-managing was something they couldn't control. The result showed that there were things that affected self-care that were outside a person's control such as hereditary, age, comorbidities, and complications. According to Orem (2001, p.278), the adequacy of self-care agencies can be affected by human and environmental factors, this is a critical factor in nursing practice situations. The results indicate that to be able to stay in control of their self-management people needed routines, hence disruptions in these routines caused self-management issues. Illustrated in the results are that even though patients had the knowledge to create strategies and routines to manage their disease, people found reasons outside their control not to do the things they knew they had to do. In contrast Graffigna et al. (2014) explain that people affected by diabetes felt a loss of control, and a condition they want to escape from that in turn could lead to failure to engage and comply with medical prescriptions. Other external LOC was religious beliefs, amongst Haitian immigrants it was seen that they both had a strong internal LOC and a strong external LOC, God was found to be a great factor in successfully managing T2DM. The results showed that some people stopped their diabetes medication whilst fasting during Ramadan. Social events were seen to affect self-care since they needed to decide whether or not to exercise self-control. In the results of the study one of the articles shows that women didn't have the time to manage their disease since they had to care for their children. This is supported by Orem (2001, p.46) that describes that placement in the family constellation affects self-care conduct (2001, p.46).

According to Orem (2001, p.278), the adequacy of self-care agencies can be affected by human and environmental factors, this is a critical factor in nursing practice situations. Furthermore, Orem (2001, p. 146) describes that psychological and physical conditions can lead to self-care deficit, this occurs when the ability to self-care is affected negatively. Placement in the family constellation affected self-care conduct (Orem., 2001, p.46).

The results of the study showed that people needed to make significant adjustments in their lives in order to accommodate self-care. The results also showed that self-care affected life negatively in social contexts. The results illustrate that the need to make lifelong adjustments in life placed a heavy psychological burden on people managing their diabetes. According to Park et al. (2013), the heavy burden of diabetes is linked to depression, comorbid depression with diabetes is correlated to significantly higher mortality rates. In the result, the authors can see that lifestyle changes such as adaptation of nutritional intake and the need for exercise didn't fit in with daily life. Planning medications in relation to exercise and diet in order to be able to control their blood glucose value required many sacrifices in life. In the results, it can be seen that people who followed the recommendations strictly felt that they lived a life that consisted of more challenges than opportunities. The results illustrate how people who have to follow strict medical regimens due to their chronic illness suffer from negative feelings such as a loss of control over their lives. The result showed that in some cultures they value food very highly

and that a diagnosis of T2DM and the need for self-care shatters their dream of relaxing and enjoying food which they worked their entire lives for. Furthermore, the results of the study showed that failure of T2DM self-care created feelings of guilt. The result illustrates that if lifestyle changes did not fit in with the norm or that it was not prestigious in their social circle, there was a concern that these changes could isolate the person. Self-care conduct is affected by social groups according to Orem (2001, p.46).

According to Karlsen et al. (2012), receiving a T2DM diagnosis causes individuals to feel stressed, disheartened, and afraid. Patients' self-image is impacted, which makes it harder for them to manage their own care. The authors agreed that it is crucial to create strategies for patients to avoid engaging in unhealthy coping mechanisms including behavioral disengagement and self-blame, and to improve patients' perspectives of their own capacity to self-manage their diabetes. Nurses' ought to think about how to support patients' efforts to control their diseases more effectively and encourage them to do so (Karlsen et. al., 2012).

The result of this literature study illustrates how medication affects the lives of some individuals who found it challenging to follow a prescribed medication routine when using medications to treat their T2DM. Because of the consumption of medicine, adopting a new lifestyle might be rather difficult. For some people it is even more difficult during their fasting month of Ramadan since they are unable to take their medication because of fasting. Some individuals who didn't realize the importance of monitoring their blood sugar levels frequently until had hypoglycemic attacks in order to maintain blood sugar levels. Blood glucose monitor (BGM) was shown to positively affect the quality of life. Because of a lack of understanding in the area, the authors claim that many people continue to lead regular lives while detesting having diabetes and taking their condition into mind. The authors contend that in order for patients to comprehend the severity of their disease, prevent any potential complications, and sustain self-care, nurses should offer consultations and place a greater emphasis on knowledge of self-care. There were no further articles or research which argue against the findings of this study.

CONCLUSION

The conclusion which can be drawn from this current study is that different people experience self-care for diabetes in different ways. Self-care adaptations lead to experiences of how life is affected, and how things affect self-care depends on one's level of knowledge, one's experiences with control, and the support individuals have around you. When a person's capacity to manage their diabetes self-care deteriorates, the nurse plays a critical role. The study's results show the need for additional research on how people manage certain comorbidities while engaging in self-care.

In order for a patient to develop appropriate self-care management, it is crucial for a nurse to establish a person-centered care approach based on the patient's conditions. With adequate guidance and support from the healthcare professionals, patients were capable of managing their diabetes using their own initiative. This study revealed that during patients' education management, patients managed to learn more about T2DM. The ability and commitment of the patients for self-care were enhanced by these training sessions. The role of nurses in treating diabetes patients is crucial. The majority of patients expressed satisfaction with the nurses' support and recommendations. Patients had self-management motivation and acknowledged what they ought to accomplish. According to the authors, it's fundamental for nurses to provide patient-centered training to both patients and their relatives in order to improve the management of self-care for people with T2DM. To improve diabetes patients' self-care routines, nurses should implement individualized, culturally suitable educational programs to acknowledge insight of this disease. To raise awareness of the disease and conduct further research, more study on T2DM patients' self-care management is required.

REFERENCES

* Results articles

Afroz, A., Alramadan, M. J., Hossain, M. N., Romero, L., Alam, K., Magliano, D. J., & Billah, B. (2018). Cost-of-illness of type 2 diabetes mellitus in low and lower-middle income countries: a systematic review. BMC Health Services Research, 18(1), N.PAG. https://doi org.till.biblextern.sh.se/10.1186/s12913-018-3772-8

*Ahlin, K., & Billhult, A. (2012). Lifestyle changes - a continuous, inner struggle for women with type 2 diabetes: A qualitative study. Scandinavian Journal of Primary Health Care, 30(1), 41–47. https://doi-org.till.biblextern.sh.se/10.3109/02813432.2011.654193

Amorim, M. M. A., de Souza, A. H., & Coelho, A. K. (2019). Competences for self-care and self-control in diabetes mellitus type 2 in primary health care. *World journal of diabetes*, *10*(8), 454–462. https://doi.org/10.4239/wjd.v10.i8.454

Awang Ahmad, N. A., Sallehuddin, M. A. A., Teo, Y. C., & Abdul Rahman, H. (2020). Self-Care Management of Patients with diabetes: nurses' perspectives. *Journal of diabetes and metabolic disorders*, *19*(2), 1537–1542. https://doi.org/10.1007/s40200-020-00688-w

*Bech, L. K., Borch Jacobsen, C., Mathiesen., A. S., & Thomsen, T. (2019). Preferring to manage by myself: A qualitative study of the perspectives of hardly reached people with type 2 diabetes on social support for diabetes management. *Journal of clinical nursing*, *28*(9-10), 1889–1898. https://doi.org/10.1111/jocn.14783

*Bernhard, G., Ose, D., Baudendistel, I., Seidling, H. M., Stützle, M., Szecsenyi, J., Wensing, M., & Mahler, C. (2017). Understanding Challenges, Strategies, and the Role of Support Networks in Medication Self-management Among Patients With Type 2 Diabetes. *The Diabetes educator*, *43*(2), 190–205. https://doi.org/10.1177/0145721717697243

Burch, E., Williams, L. T., Thalib, L., & Ball, L. (2022). What happens to diet quality in people newly diagnosed with type 2 diabetes? The 3D case-series study. *Journal of human nutrition and dietetics: the official journal of the British Dietetic Association*, *35*(1), 191–201. https://doi.org/10.1111/jhn.12953

Chatterjee, S., Khunti, K., & Davies, M. J. (2017). Type 2 diabetes. *Lancet (London, England)*, *389*(10085), 2239–2251. https://doi.org/10.1016/S0140-6736(17)30058-2

Diabetesförbundet. (2022a). *Diabetes*. Retrieved 20 November 2022 from https://www.diabetes.se/diabetes/#:~:text=Vilka%20%C3%A4r%20symtomen%20p%C3%A5%20diabetes,och%20st%C3%B6rre%20m%C3%A4ngder%2C%20och%20viktnedg%C3%A5ng.

Diabetesförbundet. (2022b). *Diabetes typ 2*. Retrieved 12 december 2022 from https://www.diabetes.se/diabetes/diabetes-typ-2/

Edwall, L. L., Hellström, A. L., Ohrn, I., & Danielson, E. (2008). The lived experience of the diabetes nurse specialist regular check-ups, as narrated by patients with type 2 diabetes. *Journal of clinical nursing*, *17*(6), 772–781. https://doi.org/10.1111/j.1365-2702.2007.02015.x

Galicia-Garcia, U., Benito-Vicente, A., Jebari, S., Larrea-Sebal, A., Siddiqi, H., Uribe, K. B., Ostolaza, H., & Martín, C. (2020). Pathophysiology of Type 2 Diabetes Mellitus. *International journal of molecular sciences*, *21*(17), 6275. https://doi.org/10.3390/ijms21176275

*Fink, A., Fach, E. M., & Schröder, S. L. (2019). 'Learning to shape life' - a qualitative study on the challenges posed by a diagnosis of diabetes mellitus type 2. *International journal for equity in health*, *18*(1), 19. https://doi.org/10.1186/s12939-019-0924-3

Gabre, M., Wireklint Sundström, B., & Olausson, S. (2019). "A little good with the bad": Newly diagnosed type 2 diabetes patients' perspectives on self-care: A phenomenological approach. Nordic Journal of Nursing Research, 39(1), 20–28. https://doi-org.till.biblextern.sh.se/10.1177/2057158518775319

Graffigna, G., Barello, S., Libreri, C., & Bosio, C. A. (2014). How to engage type-2 diabetic patients in their own health management: implications for clinical practice. *BMC public health*, *14*, 648. https://doi.org/10.1186/1471-2458-14-648

Hall, M., & Tolhurst, E. (2020). Nurses' perspectives on supporting self-management of type 2 diabetes within a primary care setting. Journal of Diabetes Nursing, 24(5), 1–5.

*Herre, A. J., Graue, M., Kolltveit, B. H., & Gjengedal, E. (2016). Experience of knowledge and skills that are essential in self-managing a chronic condition - a focus group study among people with type 2 diabetes. Scandinavian Journal of Caring Sciences, 30(2), 382–390. https://doi-org.till.biblextern.sh.se/10.1111/scs.12260

Johansson, K., Österberg, S. A., Leksell, J., & Berglund, M. (2016). Patients' experiences of support for learning to live with diabetes to promote health and well-being: A lifeworld phenomenological study. *International journal of qualitative studies on health and well-being*, *11*, 31330. https://doi.org/10.3402/qhw.v11.31330
Full text Finns

Juarez, L. D., Presley, C. A., Howell, C. R., Agne, A. A., & Cherrington, A. L. (2022). The Mediating Role of Self-Efficacy in the Association Between Diabetes Education and Support and Self-Care Management. *Health education & behavior : the official publication of the Society for Public Health Education*, *49*(4), 689–696. https://doi.org/10.1177/10901981211008819

Karlsen, B., Oftedal, B., & Bru, E. (2012). The relationship between clinical indicators, coping styles, perceived support and diabetes-related distress among adults with type 2 diabetes. *Journal of advanced nursing*, *68*(2), 391–401. https://doi.org/10.1111/j.1365-2648.2011.05751.x

Kugbey N, Asante K & Adulai K 2017. Illness perception, diabetes knowledge and self care practices among type-2 diabetes patients: a cross-sectional study, BMC Research Notes. 10 pp. 1-7, Academic Search Elite doi: 10.1186/s13104-017-2707-5

*Magny-Normilus, C., Mawn, B., & Dalton, J. (2020). Self-Management of Type 2 Diabetes in Adult Haitian Immigrants: A Qualitative Study. *Journal of transcultural nursing : official journal of the Transcultural Nursing Society*, *31*(1), 51–58. https://doi.org/10.1177/1043659619841586

Mayberry, L., & Osborn, C. (2012). Family Support, Medication Adherence, and Glycemic Control Among Adults With Type 2 Diabetes. *Diabetes Care, 35*(6), 1239-1245. https://doi.org/10.2337/dc11-2103

*Nugent, L. E., Carson, M., Zammitt, N. N., Smith, G. D., & Wallston, K. A. (2015). Health value & perceived control over health: behavioural constructs to support Type 2 diabetes self-management in clinical practice. *Journal of clinical nursing*, *24*(15-16), 2201–2210. https://doi.org/10.1111/jocn.12878

O'Donnell, M., Carey, M. E., Horne, R., Alvarez-Iglesias, A., Davies, M. J., Byrne, M., & F. Dinneen, S. (2018). Assessing the effectiveness of a goal-setting session as part of a structured group self-management education programme for people with type 2 diabetes. Patient Education & Counseling, 101(12), 2125–2133. https://doiorg.till.biblextern.sh.se/10.1016/j.pec.2018.07.009

Orem, D., Taylor, Susan G, & Renpenning, Kathie McLaughlin. (2001). *Nursing: Concepts of practice* (6.th ed.). St. Louis, Mo.: Mosby.

Park, M., Katon, W. J., & Wolf, F. M. (2013). Depression and risk of mortality in individuals with diabetes: a meta-analysis and systematic review. *General hospital psychiatry*, *35*(3), 217–225. https://doi.org/10.1016/j.genhosppsych.2013.01.006

Polit, D. F. & Beck, C. T. (2020). *Nursing Research: generating and assessing evidence for nursing practice* (11th ed.). Philadelphia: Wolters Kluwer Health.

Polit, D., & Beck, Cheryl Tatano. (2022). *Essentials of nursing research: Appraising evidence for nursing practice* (Tenth edition, international ed.). Philadelphia, PA: Wolters Kluwer.

*Ribu, L., Rønnevig, M., & Corbin, J. (2019). People with type 2 diabetes struggling for self-management: A part study from the randomized controlled trial in RENEWING HEALTH. *Nursing open*, *6*(3), 1088–1096. https://doi.org/10.1002/nop2.293

Robertson C. (2012). The role of the nurse practitioner in the diagnosis and early management of type 2 diabetes. *Journal of the American Academy of Nurse Practitioners*, *24 Suppl 1*, 225–233. https://doi.org/10.1111/j.1745-7599.2012.00719.x

Savage, S., Dabkowski, S., & Dunning, T. (2009). The education and information needs of young adults with type 2 diabetes: A qualitative study. *Journal of Nursing and Healthcare of Chronic Illness*, 1(4), 321-330.

Statens Beredning för Medicinsk och Social Utvärdering [SBU]. Evaluation and synthesis of studies using qualitative methods of analysis. Retrieved 15 december 2022 from https://www.sbu.se/globalassets/ebm/metodbok/sbuhandbook_qualitativemethodsofanalysis.pdf

Swedish Nursing Association. (2021). *ICN:s etiska kod för sjuksköterskor*. Stockholm: Svensk sjuksköterskeförening. Retrieved 15 december 2022 from https://swenurse.se/download/18.7104a0bd1817fce0092f0132/1656659417909/A4%20IC

*Van Smoorenburg, A. N., Hertroijs, D. F. L., Dekkers, T., Elissen, A. M. J., & Melles, M. (2019). Patients' perspective on self-management: type 2 diabetes in daily life. *BMC health services research*, *19*(1), 605. https://doi.org/10.1186/s12913-019-4384-7

World Health Organization [WHO]. (2022a) *Diabetes*. Retrieved 20 November 2022 from https://www.who.int/health-topics/diabetes#tab=tab_1

World Health Organization [WHO]. (2022b) *Diabetes*. Retrieved 20 November 2022 from https://www.who.int/news-room/fact-sheets/detail/diabetes

World Health Organization [WHO]. (2020c) *Diagnosis and Management of Type 2 Diabetes*. Retrieved 13 January 2023 from https://apps.who.int/iris/rest/bitstreams/1274478/retrieve

*Wu, F. L., Tai, H. C., & Sun, J. C. (2019). Self-management Experience of Middle-aged and Older Adults With Type 2 Diabetes: A Qualitative Study. *Asian nursing research*, *13*(3), 209–215. https://doi.org/10.1016/j.anr.2019.06.002

Zhang, N., Yang, X., Zhu, X., Zhao, B., Huang, T., & Ji, Q. (2017). Type 2 diabetes mellitus unawareness, prevalence, trends and risk factors: National Health and Nutrition Examination Survey (NHANES) 1999-2010. *The Journal of international medical research*, *45*(2), 594–609. https://doi.org/10.1177/0300060517693178

Attachments

APPENDIX 1: Assessment of Social Services [SBU] (2016).

Quality assessment check-list for qualitative research studies – patients' and clients' perspectives

SBU's check-list for quality assessment is an adaptation based on previously published material [1,2].

Author:_____ Year: _____ Identification no:_____

Overall assessment of study quality:			
High ❑	Moderate ❑	Low ❑	

Instructions:

- "Unclear" is used when the information is not retrievable from the paper.
- N/A (not applicable) is used when the question is not relevant.
- There are comments of clarification to some of the questions. These are found at the back of this document.

	Yes	No	Unclear	N/A
1. Aim				
a) Is the study based on a well-defined statement of the problem or a well-formulated research question?	❑	❑	❑	❑
Comments on aims, discussion of problem, research questions, etc				

	Yes	No	Unclear	N/A
2. Sample selection				
a) Is the sample selection relevant?	❑	❑	❑	❑
b) Is the method of selection clearly described?	❑	❑	❑	❑
c) Is the context clearly described?	❑	❑	❑	❑
d) Is a relevant ethical discussion included?	❑	❑	❑	❑
e) Is the relationship between the researcher and the selected sample clearly described?	❑	❑	❑	❑
Comments on sample selection, patient characteristics, context, etc				
3. Data collection	❑	❑	❑	❑
a) Is the data collection procedure clearly described?	❑	❑	❑	❑
b) Is the data collection relevant?	❑	❑	❑	❑
c) Has data saturation been achieved?	❑	❑	❑	❑
d) Has the researcher managed his own pre-understanding in relation to the data collection?	❑	❑	❑	❑
Comments on data collection, data saturation etc				
4. Analysis	❑	❑	❑	❑
a) Is the analysis clearly described?	❑	❑	❑	❑
b) Is the method of analysis relevant in relation to the data collection procedure?	❑	❑	❑	❑
c) Has saturation in terms of analysis been achieved?	❑	❑	❑	❑
d) Has the researcher managed his own pre-understanding in relation to the analysis?	❑	❑	❑	❑
Comments on method of analysis, saturation etc				
5. Results				
a) Are the results logical?				
b) Are the results comprehensible?				
c) Are the results clearly described?				
d) Are the results presented in relation to a theoretical framework?				
e) Is a hypothesis, theory or model generated?				
f) Are the results transferable to a similar setting (context)?				
g) Are the results transferable to a different setting (context)?				
Comments on the clarity, adequacy etc of the results				

APPENDIX 2

Article matrix

Article author and year	Title	Purpose (Objective)	Method	Results
Ahlin, B. & Billhult, A (2012).	Lifestyle changes - a continuous, inner struggle for women with type 2 diabetes: A qualitative study	To describe how women handle necessary lifestyle changes due to a chronic disease using diabetes as a model.	Data analyses were conducted using the phenomenological ideas of Giorgi. 10 women in Sweden were interviewed.	Five themes were identified where patients had lifestyle struggle, lack of knowledge of the disease and uncertainty of involvement of others.
Bech, L. K., Borch Jacobsen, C., Mathiesen., A. S., & Thomsen, T. (2019).	Preferring to manage by myself: A qualitative study of the perspectives of hardly reached people with type 2 diabetes on social support for diabetes management.	To explore the perspectives of hardly reached people with type 2 diabetes on social support for diabetes management from their formal and informal networks	An individual semi-structured interview. Data from 14 participants were analyzed by conventional content. Used COREQ guidelines for reporting qualitative research.	Participants preferred not to involve family and friends in diabetes management due to dysfunctional or lacking networks, existing norms and not wanting to burden vulnerable relationships. Others simply did not perceive themselves as sick and therefore saw no need for support. Participants wished for continuity and a personalized relationship with health professionals.
Bernhard, G., Ose, D., Baudendistel, I., Seidling, H. M., Stützle, M., Szecsenyi, J., Wensing, M., & Mahler, C. (2017).	Understanding Challenges, Strategies, and the Role of Support Networks in Medication Self-management Among Patients With Type 2 Diabetes.	To investigate the challenges and strategies of patients with (T2DM) regarding daily management of their medication regimen focusing on the role of their support networks.	T2DM Patients recruited. 4 semi-structured focus groups. Audio-video sessions recorded, transcribed and Self-and Family Management Framework (SFMF) guided.	Patients with T2DM experienced challenges affecting medication self-management from personal situation, health status. Patients discussed concerns on medication safety and received experience based information and advice for navigating within the healthcare system and support with daily medication self-management.
Fink, A., Fach, E. M., & Schröder, S. L. (2019).	'Learning to shape life' - a qualitative study on the challenges posed by a diagnosis of diabetes mellitus type 2.	To examine the difficulties faced by those who received a T2DM diagnosis as well as the breadth, depth, and complexity of the patients' subjective viewpoints within the framework of the German healthcare system.	19 adult T2DM patients recruited. Semi-structured interviews and recorded, transcribed, and analyzed based on grounded theory	2 strategies of action identified: 1) patients strictly followed the recommendations of the physicians, or 2) they are knowledgeable in managing T2DM. The action strategy is influenced by patients' confidence in themselves. Less educated patients tended to follow the recommendations of the physicians' strict emphasis on being compliant.

Herre, A. J., Graue, M., Kolltveit, B. H., & Gjengedal, E. (216).	Experience of knowledge and skills that are essential in self-managing a chronic condition - a focus group study among people with type 2 diabetes.	To learn about how people's perceptions of how taking diabetes self-management classes with others who have T2DM affects their health & ability to self-manage it and experience.	22 patients with T2DM who had taken a group self-management course participated in focus groups t Data coded, and Knodel's approach used to analyze.	The participants gained knowledge through hands-on experience, by doing real-world tasks, and by joining the diabetes community. They were exposed to a variety of conditions in real-life scenarios and felt safer about their own treatment as a result.
Magny-Normilus, C., Mawn, B., & Dalton, J. (2020).	Self-Management of Type 2 Diabetes in Adult Haitian Immigrants: A Qualitative Study.	To explore and describe the lived experience of adult Haitian immigrants managing T2DM living in the United States	Moustakas's phenomenological approach study. . Adult with T2DM interviewed. They were audio-recorded, transcribed verbatim, uploaded into NVivo.	Most participants felt they had been listened to and respected. They discussed their perceptions and experiences of T2DM. They understood and related their experiences of living with and managing T2DM emerged from the data in 4 themes: self-reliance, spirituality, nostalgia for home and the desire for positive patient–provider relationships.
Nugent, L. E., Carson, M., Zammitt, N. N., Smith, G. D., & Wallston, K. A. (2015).	Health value & perceived control over health: behavioural constructs to support Type 2 diabetes self-management in clinical practice	To explore health value and perceived control over health in relation to self-management behaviors in adults with T2DM.	13 adults with insulin-treated T2DM conducted. Semi-structured interviews. An in-depth thematic analysis was carried out	Participants described holding both terminal (relating to desired end states) and instrumental (a means to an end) need of a new lifestyle and maintaining quality of life. Themes impacted on self-management included comorbidities, medication management, blood glucose monitoring.
Ribu, L., Rønnevig, M., & Corbin, J. (2019).	People with type 2 diabetes struggling for self-management: A part study from the randomized controlled trial in RENEWING HEALTH.	To develop a theoretical explanation for the daily life problems and challenges perceived by those living with type 2 diabetes	A constant com-parative method to discover a framework with the core concept of struggling be- tween "ought to do" and "want to do" and related concepts.	Identified 3 situations illustrated: one where there is less struggle to let go of old habits, 2nd where there is more struggle to balance between what individuals want to do and what they ought to do and a 3rd where they are giving up struggling. Result shows that healthcare personnel must consciously seek to understand how patients perceive their own situation.

Van Smoorenburg, A. N., Hertroijs, D. F. L.,Dekkers, T., Elissen, A. M. J., & Melles, M. (2019).	Patients' perspective on self-management: type 2 diabetes in daily life	Focused on gaining a better understanding of patients' perspectives on self-management and support.	Semi-structured interviews and were conducted with ten patients with T2DM treated in Dutch primary care	Patients experience 'active' self-management when recently diagnosed. As time progresses diabetes becomes part of patients' lives with new routines.
Wu, F. L., Tai, H. C., & Sun, J. C. (2019).	Self-management Experience of Middle-aged and Older Adults With Type 2 Diabetes: A Qualitative Study.	To explore the self-management experiences of middle-aged and older adults with diabetes through a focus group	Recruit patients with diabetes. 2 focus groups with total 23 participants, data collected, and 4x group discussions	Three themes generated from analysis of the collected data: listening to the voice of the body and observing physical changes, re-recognizing diabetes and challenges and self-management implementation dilemmas.

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