

APPLICATION OF DIABETIC FOOT SPA PROCEDURE TO OPTIMIZE FOOT FUNCTION POST-CREATING DIABETIC FOOT ULCER

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ABSTRACT

This study aims to provide an overview of the application of diabetic foot spa procedures to optimize foot function after healing diabetic foot wounds. This qualitative research method uses a descriptive case study design. The results of the study indicate that the diabetic foot spa procedure can be applied to people with diabetes mellitus by using therapeutic communication stages which consist of a pre-interaction phase for conducting assessments, diagnoses, and learning action procedures. The introduction orientation phase builds trusting relationships, explanations of actions, and approval of activities. The interaction phase is to carry out the preparation of equipment, environment, patients, and nurses, as well as all implementation of action procedures, and the termination phase is for evaluation, as well as future contracts and follow-up plans. In conclusion, diabetic foot spa can be used as a nursing intervention in foot care to fulfill security and protection needs, focusing on nursing problems and the risk of disrupting skin/tissue integrity.

Keywords: Diabetic Wounds, Diabetic Foot Disease, Foot Spa Treatment Procedures

INTRODUCTION

Diabetic foot disease (diabetic foot disease) is a complication that can be experienced by people with diabetes mellitus (American Diabetes Association, 2022). Diabetic foot complications have become a challenge and a burden for healthcare systems and diabetes mellitus patients (Schaper et al., 2020). Feet with Diabetes Mellitus (DM) can experience one or several problems, such as infection, injury accompanied by neuropathy, and or Peripheral Arterial Disease (PAD) (van Netten et al., 2020), so the main supporting factors for foot complications in people with diabetes mellitus are Peripheral Arterial Disease (PAD) and peripheral neuropathy (Bus et al., 2020; Schaper et al., 2020).

Peripheral Arterial Disease (PAD) is a condition of obstructive atherosclerotic vascular obstruction in one or more extremities based on invasive or noninvasive examination (van Netten et al., 2020). Adults with diabetes mellitus with worsening glycemic control have 2-4 times increased risk of vascular disorders (Canto et al., 2019). Up to 50% of people with diabetes have PAD and diabetic foot disease together (Hinchliffe et al., 2020). PAD generally begins with atherosclerotic formation (ADA, 2020; Schaper et al., 2020). PAD may remain undiagnosed until the patient is seriously injured because many patients usually do not have the classic clinical signs of PAD beforehand, such as claudication or rest pain (Hinchliffe et al., 2020). PAD experienced by people with DM can be accompanied by neuropathy.

Diabetic neuropathy is when nerve damage occurs in people with diabetes mellitus after other causes are excluded (van Netten et al., 2020). Peripheral nerve damage (peripheral neuropathy) includes sensory, motor, and autonomic neuropathy (Bus et al., 2020). Symptoms of diabetic peripheral neuropathy often range from no symptoms to symptoms of diabetic pain (Hicks & Selvin, 2019). The prevalence of peripheral neuropathy is estimated at 6-51%, and even 50% of people with diabetes will experience neuropathy in their lifetime (Hicks & Selvin, 2019).

Peripheral arterial disease and peripheral neuropathy that are not managed properly will have a high risk of injury and infection of the feet or Diabetic foot ulcers (DFUs). A diabetic foot ulcer or diabetic foot wound is when minimal skin damage occurs in the epidermis and dermis layers (van Netten et al., 2020). Research states that 25% of diabetic wounds and amputations are related to peripheral neuropathy (Hicks & Selvin, 2019). PAD and cardiovascular disorders significantly increase the incidence of diabetic foot wounds (Hinchliffe et al., 2020) and impaired wound healing and lower extremity amputations (Schaper et al., 2020).

This condition significantly causes morbidity and mortality, reaching 5% in people with DM who have only been diagnosed 12 months and 42% who have been diagnosed for five years (Everett & Mathioudakis, 2018). Globally, the prevalence of diabetic foot ulcers is reported as 6.3%, in men 4.5%, in women 3.5%; type 2 DM is 6.4%, type 1 DM (5.5%), the prevalence in Asia 5.5%, Europe 5.2%, and in Africa it reaches 7.2% (Zhang et al., 2017).

In response to this phenomenon, it is suggested that policies are needed regarding strategies to prevent diabetic foot injuries (Zhang et al., 2017). People with diabetes mellitus with a high risk of ulceration should be screened more often than those with a low risk (Bus et al., 2020). People with type 2 DM and type 2 DM who have been diagnosed for five years must be screened at least once a year (ADA, 2022). Regular screening and appropriate management of peripheral neuropathy can reduce the incidence of diabetic foot ulcers (Hicks & Selvin, 2019).

To prevent diabetic foot wounds and optimize post-injury foot function, education is needed about proper foot care and management of pre-ulcerative signs on the feet as early as possible (Canto et al., 2019). Foot care in the form of spa therapy in China has more than three thousand years of history. It has been widely used to treat skin, respiratory, circulatory, nervous, blood, and immune diseases (Skaczkowski et al., 2018). A diabetic foot spa involves foot care activities involving foot cleaning, nail cutting, and foot massage (Wardani et al., 2019). According to the research journal (Djafar, 2019), a diabetic foot spa is one of the actions that can be taken to prevent diabetic foot complications from occurring, which can cause nursing problems and the risk of impaired skin integrity.

Diabetic foot spa is proven to reduce the risk of complications of diabetic foot disease if it is done routinely and independently (Wardani et al., 2019; Djafar, 2019). Tingling and foot pain can be reduced or lost, preventing complications such as leg injuries that often lead to amputation (Wardani et al., 2019).

Spa treatments have been shown to dilate capillaries and treat limb ischemia by increasing blood flow velocity. A diabetic foot spa for people with diabetes after wound healing can help optimize foot function. There are several publications on the research results related to diabetic foot spas. However, an overview of the application of the procedures and the proper steps in implementing a diabetic foot spa is not yet

available. Based on these results, this study aims to provide an overview of the application of diabetic foot spas to optimize foot function after diabetic foot ulcers.

RESEARCH METHODS

This case study uses a descriptive design with a nursing care approach by carrying out action procedures through the therapeutic communication stage. The author describes the application of foot spa procedures in people with diabetes based on the pre-interaction, orientation, interaction, and termination phases. The subject of this case study was a type II diabetes mellitus who had experienced diabetic foot injuries in as many as one person at the Alficare Center Bengkulu Nursing Care Center. The application of the foot spa is carried out for two weeks, four times, with an interval of 3 days.

A diabetic foot spa, in this case study, is defined as foot care for people with diabetes mellitus, which includes skin cleansing activities, pedicures (cutting and tidying toenails), and foot massage (diabetic foot massage). The diabetic foot spa procedure was carried out four times in 2 weeks. Data were collected by interview and observation, and documentation methods.

RESEARCH RESULT

Pre-Interaction Phase of Implementing the Diabetic Foot Spa Procedure

The pre-interaction phase begins after the nurse gets participant approval to become a participant. In the pre-interaction phase of implementing the diabetic foot spa procedure, the researcher conducted a nursing assessment using the instruments that had been prepared, formulated a nursing diagnosis, and prepared a nursing plan focused on preparing standard operating procedures for the foot spa procedure to be performed. The following are the results of the activities in the pre-interaction phase.

Nursing Assessment

This study uses primary and secondary data sources. The assessment was carried out using the auto-anamnesis method (interviews with direct participants) and also-anamnesis (interviews with family or closest people), other health workers (clinical nurses), observation, physical examination, and reviewing medical records and nursing notes. The following are the results of a nursing assessment, including demographic data, medical history, security and protection needs assessment, and the results of a physical examination and supporting examinations.

Demographic Data

A man, Mr. E, 56 years old, Muslim, has a junior high school education, works as a fisherman, has Kaur ethnicity, and lives in Tanjung Iman, Kaur Tengah District, Kaur Regency.

Medical History

Participant Mr. E came to the clinic with her child as a routine post-treatment visit for diabetic foot ulcers on her right leg. Participants complained that their feet often felt tingling at night and had been dry since three weeks ago. The general condition of the participants was good; compos mentis awareness, BP 140/80 mmHg, pulse 95x/m, respiratory rate 23 x/m, and body temperature 36.5°C.

Participants said they had Diabetes mellitus six years ago. Participants said they had had a debridement operation at a hospital in Bengkulu City. However, the wound had spread and festered, then the Participant underwent wound care at Alfacare Center Bengkulu for six weeks, so the wound closed adequately and healed. Participants said they had no history of allergies. Participants admitted that they did not smoke and did not drink alcohol.

Participants said that no family had a history of diabetes mellitus. Participants said there were families with a history of heart disease and hypertension.

Security and Protection Needs Assessment

The focus of this case study is on meeting security and protection needs so that researchers are more focused on studying and presenting the results of the study on the focus of assessing these needs, along with the results of the anamnesis on the security and protection needs of the participants:

Table. 1
Results of Anamnesis Assessment Focus
on the Need for Security and Protection

No	Assessment variables	Anamnesis results
1	Skin/tissue integrity	The patient said that since 1 year the skin of the feet and hands has been dry so they are always given vaseline 3x a day, 2 months ago there was a wound on the right leg and now it has healed. Currently the patient says there are no sores, swelling, and a feeling of heat or cold in the hands or feet.
2	Body temperature	The patient says the body feels comfortable and is fine and has not had a fever or chills for the past month. If the patient has a fever, he usually takes paracetamol immediately.
3	Violence and injury risk behavior	The patient admits that he is rarely angry, if he feels offended and disappointed, the patient is calmer by praying. The family said the patient was calmer, never angry, and patient
4	Allergy risk	The patient admitted that he had no history of food or drug allergies in his life.
5	Perceptual sensors	Participants claimed to have no disturbances in the function of smell, hearing. The patient said that his vision function had decreased, so he used plus (+) glasses since 3 years ago. The patient admits that his feet still often feel a decrease in feeling and there was even a history of shoes (sandals) slipping off while walking without realizing it.
6	Information and communication	Participants admitted that they did not have any problems conveying information and could communicate well
7	Irrational use of antibiotics	Participants said they had never taken antibiotics without a doctor's prescription
8	Immunity state	Participants admitted that they had never received a Covid-19 vaccine
9	knowledge	Participants had previously received knowledge about diabetes mellitus from clinical nurses and other health workers, but participants did not understand diabetes foot care.

Based on table 1 above, it can be seen that in the assessment of security and protection needs, data was found that patients admitted that their feet often felt a decrease in feeling, and even had a history of slipping off when walking without realizing it.

Physical Examination of the Lower Extremities with the PEDIS Method

Table. 2
Lower Extremity Physical Examination Results
with the PEDIS Method in People with Diabetes Mellitus

No	Examination Variables	Finding
1	Pulsation	The strength and rhythm of the pulse was palpable on the left and right femoral and popliteal arteries, a decreased pulse was felt on the left and right dorsalis pedis. The temperature in both areas of the thighs feels warm according to other body temperatures, but feels cold starting from the dorsalis pedis to the tips of the toes. Patellar reflex decreased in both legs. Ankle Brachial index (ABI) = 0.7 mm Hg
2	Sitemap	There were no signs of reddish inflammation on the skin of the thigh to the toe, a scar was visible on the surface of the instep of the right leg. It can be seen that there are black spots (hyperpigmentation) scars from mosquito bites in the patient's tibia and fibula area. The skin looks dry but not flaky.
3	Deformities	Legs parallel in length, Toenails hard and thick, slightly pale in color, CRT < 3 seconds. You can see hammer toe on left and right forefinger, no claw toe, no charcoot, no bunion, no thopus, no hallux valgus, no pes cavus, no maceration on the surface of the foot, no callus thickening on feet, no corns, no edema, no sores
4	Inflammation	No signs of reddish inflammation were found on the feet, no warm or hot temperature was felt in the leg area, no swelling was seen, no response to tenderness in all areas of the leg, the leg could be moved according to instructions
5	sensors	<i>Monofilament Semmes Weinstein test: loss of sensation at 3 checkpoints</i>

Table 2 above shows the results of the physical examination Ankle Brachial index (ABI) = 0.7 mmHg, loss of sensation at 3 check points, hammer toes visible on the left and right forefingers.

Nursing Diagnoses

Based on the results of the nursing assessment that has been carried out, it can be formulated that the nursing problems found in the disorder of the need for security and protection in these participants following the Indonesian Nursing Diagnostic Standards (IDHS) references, namely: Risk for impaired skin/tissue integrity related to risk factors for changes in circulation and peripheral neuropathy and pigmentation changes.

Nursing Plan

After formulating a nursing diagnosis, the next researcher prepares a nursing plan. Formulating the nursing plan begins with the determination of goals and outcome criteria. The objectives and outcome criteria the researchers referred to the Indonesian Nursing Outcome Standards (SLKI), namely peripheral perfusion. Researchers formulated nursing intervention concerning the Indonesian Nursing Intervention Standards (SIKI), Foot Care.

The nursing interventions are formulated based on observation, therapeutic, educational, and collaboration activity groups. Observation activity, namely identification of foot care that is usually done. Check for irritation, cracks, lesions, calluses, deformity, or edema. Check for irritation, cracks, calluses, deformity, or edema. Check the thickness of the nails and discoloration. Monitor foot moisture. Monitor gait and distribution of weight on feet. Monitor cleanliness and general condition of shoes and socks. Monitor leg arterial insufficiency by measuring the Ankle Brachial Index (ABI), especially at age > 50 years. Monitor peripheral neuropathy with the Weinstein summer monofilament test. Monitor blood sugar levels or HBA1c value < 7%

Therapeutic activities, namely: Dry between the feet. Apply foot moisturizer as needed, and clean and trim nails, if necessary. Educational Activities, namely: teach the importance of foot care. Teach how to prepare and cut nails. Suggest applying moisture absorbent if necessary. It is recommended to check the inside of the shoe before putting it on. Suggest monitoring foot temperature using the back of the hand. Avoid pressing on the injured leg using a cane or special shoes.

The development of nursing interventions in SIKI for foot care is based on the evidence base that researchers have traced from several scientific sources, namely, implementing diabetic foot spas. The following will describe an overview of the implementation of the procedure.

A diabetic foot spa (foot spa) is a treatment of the feet and toes, and nails done as part of a spa treatment. Diabetic Foot Spa is a therapy for participants with diabetes mellitus as a whole starting from cleansing (skin cleansing), pedicure (nail cutting), and foot massage (foot massage).

The purpose of diabetic foot spa treatment is to nourish the skin of the feet, relieve fatigue or make the feet more relaxed (relaxation), soften the rough skin, clean the hard skin around the nails and the heels of the feet, clean dirt from the nails, and strengthen the pads. Nail. Diabetic foot spa can promote peripheral blood circulation in the feet; when a person has diabetes mellitus, what can be done is to prevent complications of peripheral vascular disease and diabetic neuropathy by improving blood circulation in the feet.

The diabetic foot spa procedure consists of 3 main procedures, namely skin cleansing (cleansing), pedicure (cutting and trimming toenails), and foot massage (foot massage).

Skin cleansing is an action in a diabetic foot spa that is carried out to clean the Participant's feet. The action begins with soaking the feet in the water. You are then cleaned using a gentle, non-toxic antiseptic soap. Soak your feet should be done for 5-10 minutes. Patients with DM should not be more than 10 minutes because of the risk of maceration. The washing technique is done by gently swabbing and brushing the feet on the heels and between the toes and nails.

Padycure is an act of care performed on the toenails, including cutting and trimming the Participant's toenails. DM sufferers should use a sharp cutting tool such as nail clips or pliers to cut the toenails. The technique of cutting toenails is not recommended to be curved but straight.

Foot Massage is an act of care in the form of massage in the foot area. Massage is done with gentle strokes with a small quantity of pressure to increase the smooth flow of blood in the legs.

In this phase, the researcher also prepared tools and materials, including hand soap, mask, apron, non-toxic gentle antiseptic soap, a basin filled with water, a soft brush (toothbrush), one small towel, one washcloth, nail pliers/nail trimmer, oil massage, lotion (Vaseline). Orientation Phase in the Implementation of Diabetic Foot Spa Procedures

The application of the diabetic foot spa procedure to Mr. E was carried out by researchers four times within two weeks. The application of the foot spa is carried out using therapeutic communication stages, namely starting from the stages of orientation, interaction, and termination. At each meeting, the researcher carried out these three stages continuously. The results of the description of the application of the diabetic foot spa intervention in the orientation phase are illustrated as follows:

Therapeutic greeting: In the orientation phase, the nurse gives a therapeutic greeting with the greeting that the patient likes, followed by getting acquainted. The nurse introduces himself first or reminds himself of his identity, such as the name and origin of the institution.

"Good morning, sir; introduce me, Bella Samya Dwi Putri, from the Nursing Education of the Bengkulu Ministry of Health Poltekkes. Do you still remember, sir?"

Evaluation and validation: The nurse identifies the patient's identity by asking how the patient is doing and asking the patient to repeat the name, date of birth, or medical record number. Next, the nurse validates the identity submitted by the patient with the contents on the patient's identity bracelet. The nurse validates the purpose of the visit or the patient's current complaints regarding indications for action.

"Father, how are you today? Can you state your full name and date of birth? Thank you, Mr. E. How is your condition today? Have you had any complaints, sir?».

Informed consent. The nurse explains the diabetic foot spa procedure, the purpose, the benefits, and the length of time the action will be performed, and allows asking questions and seeking approval from the patient and family to start the procedure.

"I will do a diabetic foot spa or treatment on your father's feet. This action is to make your feet more relaxed, improve peripheral blood circulation and optimize the condition of your feet after wound healing, and prevent complications from your diabetic foot. Can we start now, sir?"

The Interaction Phase in the Implementation of the Diabetic Foot Spa Procedure

The interaction phase in implementing the diabetic foot spa after the orientation phase is carried out. In the interaction phase, the activities carried out are equipment preparation, patient preparation, environmental preparation, and nurse preparation.

After all the preparations were made, the nurse carried out the diabetic foot spa procedure according to the stages of work. The description of the application of the interaction phase procedure for applying diabetic foot spa can be described as follows:

Tool preparation: The nurse checks the completeness of the tools that have been brought for the diabetic foot spa, including care products (soap, massage oil), small towels/washcloths, foot soaking tubs, brushes, hand scoops, masks, nail clippers, and filers.

"Excuse me, sir; I brought the tools closer to make it more comfortable and safe to carry out this action.»

Patient preparation: The nurse arranges a comfortable position for the patient, where the patient is generally more comfortable in the semi-Fowler's position. The nurse asks the patient's willingness to open the bottom of the clothes (pants) and free the socks to facilitate the action.

"How are you comfortable with your sitting position? ... can you help me lift the hem of your pants to your knees, sir? ... Thank you, sir."

Environmental Preparation: The nurse regulates the environment with sufficient light and temperature, and the nurse maintains the privacy and security of the participants when the diabetic foot spa is performed.

"Sir, I have permission to add a spotlight to the area where your feet are so that it is brighter, and I also have permission to close this cover. How sir, is the room temperature comfortable?"

Nurse preparation: Nurses wash their hands first and use personal protection through hand scoops, wearing masks and aprons.

"Please wait a moment, sir; I wash my hands, wear gloves, and put on an apron."

Skin cleansing (cleaning): The nurse brings the foot soak basin closer. The nurse soaks the Participants' feet up to the ankles for five to ten minutes.

"Sir, we will start the initial stage of foot care by washing your feet while your feet are soaked for 5-10 minutes; please, sir, put your feet in a foot-soaking basin."

The nurse lifts both feet from the foot soaking area, then cleans the skin of the feet using non-toxic, gentle antiseptic soap until clean using a soft brooch. The nurse brushes the toenails using a special brush to the sidelines of the fingers and toenails until they are clean. Then rub the soles of the feet with a brush and soap until clean. The nurse rinses both feet with clean water and dries them with a washcloth or towel.

"Please lift your feet, sir. Next, I started cleaning the skin of my feet down to the soles and gaps of my toes with soap and broached gently, sir» ... «Now I will rinse and dry it, sir.»

Padycure (cutting and trimming toenails): The nurse cuts the Participant's long nails little by little with direction straight. Then after finishing cutting the nails, proceed with flattening the nails that have been cut using a nail file.

"After washing, I will cut your nails, sir."

Foot massage (diabetic foot massage): The nurse gives an oil massage to both participants' feet. Doing massage on both feet, with gentle strokes with a small quantity of pressure starting from the calves, ankles, down to the back, and the tips of the toes to increase the smooth flow of blood in the feet.

"Now I will do a light massage on your feet, sir."..."Is the pressure enough, sir?"

Clean and dry the Participants' feet with a towel or washcloth from the oil massage earlier, then apply the Vaseline lotion that the Participant likes on all legs except between the feet and soles. The nurse is tidying up the tools.

"I wipe and dry it first, sir.".." then I will rub your feet with this lotion, sir"...

"Thank God, sir, the action has been completed. I will tidy up the tools first, sir."

Termination Phase in the Implementation of Diabetic Foot Spa Procedures

The interaction phase in implementing the diabetic foot spa procedure after the orientation phase is carried out. In the interaction phase, the activities include equipment preparation, patient preparation, environmental preparation, nurse preparation, and the implementation of diabetic foot spa procedures. The description of the application of the interaction phase of the application of the foot spa can be described as follows:

Subjective evaluation: The nurse asks participants how they feel after having a diabetic foot spa

"Bapak, alhamdulillah, the foot spa procedure has been completed. Thanks to your cooperation, the action went smoothly according to the procedure. How did you feel after doing the foot spa?"

Objective evaluation: The nurse conveys the results of observations during the process and after the foot spa process to the Participants.

"Father, you felt comfortable doing the foot spa earlier. Now the skin on the Participant's feet looks cleaner and fresher and feels moisturized, the skin on the feet is not dry, and the skin on the feet looks clean and smells good. Your toenails also appear to have been cut neatly in a straight direction; the thickened nails also appear thinning, and the tips of your feet feel warm like the other parts.

Future contract: The nurse and the Participant agree on a future contract

'That means we agreed in 3 more days or on Thursday, you will come here again, and I will do the foot spa again.'

Follow-up plan: The nurse conveys a follow-up plan that Participants should do while at home.

"Sir, do not forget to dry your feet immediately using a soft towel if your feet come into contact with water after bathing or ablution. Next, apply Vaseline to the entire surface of the skin and feet except for the gaps in the toes, sir, at least in the morning and evening.

DISCUSSION

The success of treatment lies not only in the actions and treatment given but also in the communication process between health workers and patients (Suganda et al., 2019). So that the application of the diabetic foot spa procedure is described based on the stages of therapeutic communication in order to obtain an appropriate and

therapeutic picture of communication for the patient in carrying out an action procedure.

Overview of the Pre-Interaction Phase of the Application of Diabetic Foot Spa

In the pre-interaction stage, health workers prepare themselves to deal with patients as communicators who carry out therapeutic communication (Suganda et al., 2019). In the pre-treatment phase, the goal is a diagnostic assessment of the patient, which helps prepare an integrated therapeutic pathway whose strategic goal is to improve metacognitive function (Carcione et al., 2021). Before carrying out a procedure for implementing a diabetic foot spa, the nurse must find out some information about the patient related to demographic data, medical history, nursing diagnoses, etc.

The activities carried out by the nurse in this pre-interaction phase are the nurse collecting data from previous history so that the nurse knows what actions the nurse may and may not take. Nurses must also follow standard operating procedures that apply to avoid deviating from action procedures. Suppose the nurse already knows the patient's condition and indications of action to be taken for the patient. In that case, it is hoped that the nurse will be able to adjust the most appropriate way of delivering therapeutic communication to the patient so that the patient is comfortable interacting (Suganda et al., 2019).

In the early stages of the nursing process, assessment becomes essential for further management. Good assessment and patient feedback are the basis for creating an excellent therapeutic relationship (Carcione et al., 2021). The initial nursing assessment in this phase can be carried out using three methods: the interview or analysis method, the observation or physical examination method, and document tracking. Citation. The critical element that supports efforts to prevent diabetic foot complications is identifying risks regularly and examining at-risk feet (Schaper et al., 2020).

In the history taking, the nurse needs to be able to explore the patient's risk factors for diabetic foot complications. The nurse needs to examine the patient's complaints and medical history. Patient complaints need to be explored in depth because the absence of complaints or symptoms of people with diabetes does not mean that the patient is free from the risk of diabetic foot (Schaper et al., 2020).

At the time of assessment, it was likely that the patient had asymptomatic neuropathy, PAD, or pre-ulcerative signs (Schaper et al., 2020). However, this should still be followed up with other physical examinations. Based on the results of this study, participants stated that they had undergone a debridement operation at a hospital in Bengkulu City, but the wound had spread and festered. After that, the Participant underwent wound care at Alfacare Center Bengkulu for six weeks to close the wound and heal. Based on the results of this anamnesis, it is evident that the patient already has a diabetic foot ulcer.

This study also identified that participants complained that they still often feel tingling at night and the skin on their feet is dry. This follows the research results, which state that neuropathic pain can be described as burning or stabbing pain, numbness, hyperesthesia, or deep pain. It is often worse at night and usually affects the lower legs and feet, although some patients also experience complaints in their hands (Hicks & Selvin, 2019).

Assessing the length of time participants were diagnosed needs to be done. This study showed that the patient had been diagnosed with DM 6 years ago. This condition is significantly following the results of previous studies, which stated that morbidity due to diabetic foot complications reached 42% in people with DM who had been diagnosed for five years (Everett & Mathioudakis, 2018). As you get older and have poor glycemic control, you are at increased risk of experiencing peripheral arterial disorders (Canto et al., 2019).

On physical examination, it is recommended that those with DFU be evaluated for PAD by palpating pedal pulses or ankle-brachial index (ABI) (Everett & Mathioudakis, 2018). In this study Pulsation examination was carried out on the femoral, popliteal, and dorsalis pedis fiber arteries, followed by an ABI examination. The results of this study obtained an ABI of 0.7 mmHg. There is no defined threshold value above which PAD can be excluded. However, PAD is a less likely diagnosis with an ABI, 0.9–1.3; TBI, ≥ 0.75 ; and triphasic pedal Doppler waveforms (Hincliffe et al., 2020).

Physically examine the foot for any deformity or development; profuse callus and ulcerative signs, such as blisters, fissures, and bleeding; and limited joint mobility (Bus et al., 2020). To qualify, a foot examination must include a visual examination, sensory examination with monofilament testing, and assessment of lower extremity pulses (Hicks & Selvin, 2019).

After obtaining the assessment data, then the nurse in the pre-interaction phase of applying the diabetic foot spa procedure must be able to formulate a nursing diagnosis. Diagnostic communication is followed by synthesizing what emerges from clinical interviews and tests to offer the patient an initial picture of functioning (Carcione, 2021).

Nursing diagnoses that are the main focus that arises in people with diabetes mellitus Mr. E in the application of this diabetic foot spa procedure, namely the risk of impaired skin/tissue integrity associated with risk factors for changes in circulation and peripheral neuropathy and changes in pigmentation. The risk of impaired skin integrity is when the skin (dermis and epidermis) or tissues (mucous membranes, cornea, fascia, muscles, tendons, bones, cartilage, joint capsules, and ligaments) are damaged.

As an additional treatment activity in overcoming the risk of impaired skin integrity, the nurse applies a diabetic foot spa as companion therapy. One way to increase blood circulation is with a diabetic foot spa consisting of various activities, namely skin cleansing, cleaning using soft and mild baby soap, pedicure, cutting and scraping nails if the respondent has long nails, and the last is the foot—massage, namely superficial massage of the feet, to increase blood circulation (Affiani, 2017).

Overview of the Orientation Phase for the Implementation of the Diabetic Foot Spa Procedure

The orientation or introductory phase is carried out every time you meet with the patient to carry out a procedure (Suganda et al., 2019). The orientation phase aims to validate the strength of the data and plans that have been made according to the current state of the Participants, as well as evaluate the results of past actions, and must introduce themselves and so do the Participants so that there is a relationship of mutual trust. During the orientation phase, the nurse also informs about work steps and time contracts to be used so that participants feel it is a short time (Carcione,

2021). Therefore activities in the orientation phase include: conveying therapeutic greetings and introductions, carrying out evaluation and validation (patient identification), and conducting informed consent by providing information regarding the procedure to be carried out and requesting approval for action.

In the orientation phase of applying the diabetic foot spa procedure, the nurse greets and introduces herself first. Furthermore, the nurse evaluates and validates by identifying the patient by name and date of birth and evaluating the patient's complaints. This step aims to validate the accuracy of the data and plans that have been made according to the patient's current condition, as well as evaluate the results of past actions (Suganda et al., 2019).

In this phase, the nurse explains the action of applying the diabetic foot spa aims to nourish the skin of the feet, smoothen and increase blood circulation, relieve fatigue or make the feet more relaxed (relaxation), soften the rough skin, clean the hard skin around the nails and heels of the feet removes nail debris and strengthens the nail bed.

The application of a diabetic foot spa is given two times a week and is carried out within two weeks; in a diabetic foot spa, there are three actions carried out, namely skin cleansing, pedicure (cutting and tidying toenails), and foot massage. After explaining the diabetic foot spa, the nurse asked whether the participants would respond.

This phase concludes with the therapeutic contract, which represents the framework of care and defines the minimum conditions necessary for therapy: the agreement between patient and therapist regarding therapy goals, shared tasks, regulatory arrangements, and the therapeutic relationship. The therapeutic contract is an important step, as it is a central element for creating and arranging a therapeutic alliance (Carcione, 2021). In implementing this procedure, the researcher and the patient agreed to start the procedure after the participants had explained the definition, purpose, procedure, benefits, indications, and contraindications for action and time contract.

Description of the Interaction Phase of the Implementation of the Diabetic Foot Spa Procedure

The interaction or work phase is the core of the communication therapy process. This stage is quite long in therapeutic communication because it requires a step-by-step implementation of the action procedure. At this stage, the nurse first makes four preparations: preparation of tools, preparation of the environment, preparation of patients, and preparation of officers.

In preparing the tools, the nurse approaches and adjusts the position of the tools and materials used in the procedure so that they are easy to reach and practical. In preparing the environment, the nurse ensures that the lighting is sufficient to illuminate the nurse in acting, ensures a comfortable temperature, and maintains the patient's privacy and safety before the action is carried out. In preparing the patient, the nurse assists and ensures that the patient is comfortable and therapeutic according to the action to be performed. In preparing officers, nurses wash their hands and use personal protective equipment like gloves, masks, and aprons. Do not forget the nurses to pray before implementing the diabetic foot spa procedure.

After that, the researchers gave the application of a diabetic foot spa which began with the stages of skin cleansing (cleaning), pedicure (cutting and trimming toenails), and foot massage (massaging). This research is supported by several

journals which explain that the nursing actions of implementing a diabetic foot spa can improve blood circulation and prevent diabetic foot complications from occurring (Djafar, 2019).

Overview of the Termination Phase of the Application of the Diabetic Foot Spa Procedure

The termination phase is the final phase of the therapeutic communication stage (Suganda et al., 2019). Activities in the termination phase are subjective and objective evaluations, future contracts, and follow-up plans. In the termination phase, the nurse asked how the participants felt after being given the application of the foot spa. Furthermore, the nurse contracts Mr. E's time for the next meeting; a follow-up action plan will be given. Namely, the nurse will perform a diabetic foot spa action the next day, and the nurse encourages participants to do a diabetic foot spa independently if they feel their feet are tingling more often and give lotion if the skin of the feet is dry.

On H, the last day of the meeting, the nurse said goodbye to the participants where. Mr. E said he was very happy for the nurses because they had taught him the steps to apply the diabetic foot spa to prevent diabetic foot complications and improve blood circulation, as well as those who cared for him. The nurse also provides education on how to do a diabetic foot spa and encourages participants to take this action if participants feel dry skin and their feet often tingle again.

CONCLUSION

The diabetic foot spa procedure can be applied to all DM patients using a therapeutic communication approach consisting of a pre-interaction phase, an orientation phase, an interaction phase, and a termination phase. A diabetic foot spa can be used as a nursing intervention in foot care to address nursing problems with the risk of impaired skin/tissue integrity.

SUGGESTION

This diabetic foot spa procedure can be used as a guide in preparing standard operational procedures for actions in providing services. This procedure can be developed according to the needs of each service in order to improve the standard and quality of service in each institution.

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