

Experiences and guidelines for footcare practices of patients with diabetes mellitus

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Abstract

The former Transkei is a predominantly rural region of the Eastern Cape Province. The poor infrastructure in this area results in inaccessibility of the available health services. The majority is ill equipped to deliver optimum diabetes care. There is an increase of lower limb amputations and lack of knowledge among patients with diabetes mellitus in the former Transkei. These complications can be prevented by patient education on self-management and appropriate footcare procedures. This qualitative study was conducted to explore and describe the experiences and footcare practices of diabetic patients who live in the rural areas of Transkei.

A sample of 15 participants was drawn from Umtata Hospital Diabetic Clinic register through predetermined selection criteria. The sample consisted of five men aged 49 - 74 years, and ten women aged 30 - 64 years. Five patients (two men and three women) had foot ulcers or an amputation, while ten patients had no obvious foot problems. In-depth phenomenological interviews were conducted with all 15 patients. Interviews were tape recorded in Xhosa, transcribed, and translated into English for analysis. Direct observation of footcare was done with eight patients from the sample. Content analysis of the phenomenological interviews was facilitated by a protocol; and a checklist guided direct observation of footcare. A debate took place among the three coders to come to a consensus about the themes that emerged from their individual analyses. Guba's model of trustworthiness was utilised to ensure that the findings of this study reflect the truth. Ethical considerations were based on the guidelines cited by the Democratic Nursing Organisation of South Africa (1998: 2.3.1-2.3.4) and the South African Medical Research Council (1993: 32-44).

Findings revealed predominantly negative experiences in the internal and external environments of the persons with diabetes mellitus; as well as poor footcare knowledge and practices. The recommendations relate to improving diabetes mellitus as well as their footcare knowledge and skills through education; promoting adherence to treatment regimens; providing emotional support; improving their self-image; changing health beliefs; improving the quality of care in public health facilities; and increasing awareness among employers of persons with diabetes mellitus.

Opsomming

Die voormalige Transkei is 'n oorwegend plattelandse streek in die Oos-Kaap. Die swak infrastruktuur in die gebied veroorsaak dat beskikbare gesondheidsdienste ontoeganklik is. Die meerderheid is swak toegerus om optimum diabetiese sorg te lewer. Daar is 'n toename in amputasies van die onderste ledemate en 'n gebrek aan kennis onder pasiënte met diabetes mellitus in die voormalige Transkei. Hierdie komplikasies kan voorkom word deur pasiënte op te voed om self beheer te neem van hul toestand asook om die toepaslike voetversorgingsprosedures te volg. Hierdie kwalitatiewe studie is uitgevoer om die ervarings en voetversorgingspraktyke van diabetiese wat in die plattelandse gebiede van Transkei woon, te verken en te beskryf.

'n Steekproef van 15 respondente is vanaf die Diabetes kliniekregister by die Umtata Hospitaal getrek deur middel van vooraf bepaalde seleksie-kriteria. Die steekproef het vyf mans tussen die ouderdomme van 49 - 74 jaar en tien vroue tussen 30 en 64 jaar oud ingesluit. Vyf pasiënte (twee mans en drie vroue) het voetulkes of 'n amputasie gehad, terwyl tien pasiënte geen ooglopende voetprobleme gehad het nie. Fenomenologiese indiepte onderhoude is met al 15 pasiënte gevoer. Onderhoude is in Xhosa op band vasgelê, getranskrieer en in Engels vertaal vir analise. Regstreekse waarneming van voetversorging is op agt van die pasiënte in die steekproef gedoen. Inhoudsanalise van die fenomenologiese onderhoude is met behulp van 'n protokol vergemaklik; en 'n kontrolelys het die regstreekse voetversorgingsobservasies toegelig. 'n Bespreking tussen die drie kodeerders het eenstemmigheid bewerkstellig ten opsigte van die temas wat uit hul individuele analises voortgespruit het. Guba se model van vertrouwenswaardigheid was gebruik om te verseker dat die bevindinge van hierdie studie die werklikheid weerspieël. Etiese oorwegings is op riglyne gebaseer wat in die Demokratiese Verplegingsorganisasie van Suid-Afrika (1998: 2.3.1-2.3.4) en die Suid-Afrikaanse Mediese Navorsingsraad (1993: 32-44) vervat is.

Bevindinge het oorwegend negatiewe ervarings in verband met die interne en eksterne omgewings van mense met diabetes mellitus onthul; sowel as swak voetversorgingskennis en praktyke. Die aanbevelings hou verband met die verbetering van diabetes mellitus asook voetversorgingskennis en vaardighede deur middel van

opvoeding; bevordering in die nakoming van voorgeskrewe behandeling; verskaffing van emosionele ondersteuning; bevordering hul selfbeeld; verandering in gesondheidsoortuigings; verbetering in die kwaliteit van sorg by openbare gesondheidsfasiliteite; en 'n verskerpte bewusmaking onder werkgewers van persone met diabetes mellitus in hul diens.

Introduction

Diabetes mellitus is rapidly emerging as a major public health problem in this country. It was estimated in 1996 that about 0.5 million people in South Africa had diabetes mellitus. According to the Working Group of the National Diabetes Advisory Board (1997: 499), there is a high prevalence of diabetes mellitus in South Africa, with the Indian population leading with 10%. Since no recent national screening studies have been done, the exact number of people with diabetes mellitus is unknown, but certainly there are many of undiagnosed diabetes mellitus patients.

The main goal of therapy is to achieve levels of blood glucose as close to the non-diabetic state as feasible. Diabetes mellitus is a chronic disease and therefore requires sufferers to take responsibility in their own care. Patients must acquire the knowledge and technical skills required for its management such as self-monitoring of urine and blood glucose, prevention and recognition of hyper / hypoglycaemia as well as other complications (Working Group of the National Diabetes Advisory Board, 1997: 502-508). There is evidence that long-term normoglycaemia and effective health promotion program on diabetes mellitus prevent, delay or attenuate this disease complications (Huddle & Kalk, 2000: 7).

It is estimated that lower limb amputations are about twenty times more common in the diabetic than the non-diabetic population (Huddle & Kalk, 2000: 41). There are no figures from Africa concerning the prevalence of the diabetic foot, but there is a perceived increase of foot problems among persons with diabetes mellitus in South Africa. A study on lower extremity amputations conducted by the researcher (1999) in Transkei revealed that the highest number of re-amputations and deaths occurred among persons with diabetes mellitus, 33% and 39% respectively (unpublished). This alarming statistic coupled with the shortfall of the Transkei healthcare delivery system in diabetes care warrants the empowerment of the patients so as to equip them with skills and knowledge required for the prevention of foot complications. An 85% reduction of below knee amputations was achieved in Geneva consequent to a footcare teaching program for diabetic patients (Assal, Mühlhauser, Pernet, Gfeller, Jörgens & Berger, 1985: 608); Clement, 1995: 1210; Gill, Mbanya & Alberti, 1997: 212). But, the development of an appropriate footcare education programme for the diabetic patients in Transkei can only be based on their current levels of knowledge, attitudes and footcare practices.

Problem statement and research questions

There seems to be an increase of lower limb amputations and lack of diabetes-related knowledge among patients in the former Transkei, and yet the National Department of Health (1998: 18) emphasises the necessity for patients to acquire the relevant knowledge and skills for successful diabetes management. This study is focussing on the experiences of patients with diabetes mellitus and their existing footcare practices in this region in order to develop appropriate guidelines on foot care for them, hence the following research questions arise:

- What are the experiences of patients in the rural areas of former Transkei concerning diabetes mellitus?
- How do patients with diabetes mellitus in the former Transkei take care of their feet?
- What guidelines can be described to facilitate a health promotion program on footcare for patients with diabetes mellitus in the former Transkei in order to prevent complications?

Assumptions

The following theoretical assumptions are applicable:

- Diabetes mellitus is an endocrine disease that impacts on the whole person, characterised by chronically elevated blood glucose concentration and frequently accompanied by other clinical and biomedical abnormalities.
- The patient with diabetes mellitus and the health care provider are spiritual beings who function in an integrated bio-psychosocial manner to facilitate promotion, maintenance and restoration of the health of that patient.
- The patient with diabetes mellitus and the health care provider interact with their external environment, which is physical, social and spiritual in a holistic manner.
- The interaction between the internal and the external

environment of the patient with diabetes mellitus influences their lived experiences concerning diabetes as well as their footcare practices.

- The health care provider, through the health delivery system, facilitates promotion, prevention, maintenance and restoration of the health of the patient with diabetes mellitus.

Terminology

• Diabetes Mellitus

Diabetes mellitus is a syndrome caused by a relative or absolute deficiency of insulin. It is characterised by chronically elevated blood glucose concentrations. The normal range is 3.5-7.0mmol/L. The concept 'diabetes mellitus, diabetes and DM' will be used synonymously in the text of this study, and will refer to Type II of this disease (Huddle & Kalk, 1994: 4; Alberti & Zimmet, 1998: 542-544; Assal, et al, 1985: 602).

• Experiences

The experiences referred to in this study are patients' personal encountering of events around which positive or negative attitudes are formed. These lived experiences will include self reported adherence to advised treatment regimes; survival skills (such as prevention, recognition and treatment of: hyper / hypoglycaemia, complications and other co-existing illnesses); emotions, beliefs as well as understanding resulting from living with diabetes (Palmer, 1994: 277-278).

• Footcare

For purposes of this study footcare included self-reported footcare knowledge, values and attitudes towards footcare as well as the observed skills possessed by the patients with diabetes mellitus, aimed at preserving and protecting their feet, and preventing foot complications.

• Patients in the rural areas of Transkei

In this study patients refer to people (male and female) 30 to 74 years old, who suffer from diabetes mellitus, with and without foot problems, and reside in the former Transkei region of the Eastern Cape Province, which is classified as a rural area by the Rural Development Task Team and the Department of Land Affairs (1997: 18).

Research design

A qualitative, phenomenological, explorative, and descriptive design that is contextual in nature was used to explore and describe the experiences and footcare practices of patients with diabetes in the rural areas of Transkei. Umtata Hospital diabetic clinic, as a referral center for all the district and day hospitals, clinics and private practitioners in the Transkei region,

provided the accessible population of all the referred patients from which purposive sampling was done to select participants. A sample of 15 participants was drawn from diabetic clinic attendance register based on the following criteria:

- Resident in Transkei for at least six months.
- Age 30 years and older.
- At least a 6-month confirmed diabetic by a medical practitioner.
- Ability to communicate either in Xhosa or English.
- Patients with or without foot complications were selected.
- Willingness to demonstrate footcare.

Method of data collection

The data collection methods used were the in-depth interview and observation, both with structured and unstructured aspects. Field notes were also written immediately after leaving each participant. The interview process was based on the principles described by Burns & Groves (1987:304-309); De Vos (1998: 300-311) and Maso & Wester (1996:43- 57) and were applied accordingly.

Participants were interviewed at different venues such as their homes (n = 8), workplace (n = 1), day hospital where one came to collect treatment (n = 1), and in hospital wards where they were hospitalised (n = 5). They were all asked to respond to this question: "Ndicela undibalisele ukuba apha ebomini bakho kuthetha ukuthini ukuba nesifo seswekile, yaye nanje ngomntu onesi sifo, uzinonophela kanjani iinyawo zakho?" ("Please tell me what is it like to have and live with diabetes, and as a diabetic person, how do you take care of your feet?") Interviews were recorded on audiotape.

Data on foot care was obtained from the interviews and from direct observation. The observational method described by Polit & Hungler (1991: 326 – 328) and Burns & Grove (1987: 304 – 305), was used for exploring and describing how participants cut their toenails, but to guide the direct observation a checklist was used. The participants were asked to demonstrate how they cut their toenails, using any instrument that they were familiar with. The researcher provided a nail clipper, a razor blade, a small pair of scissors and a nail file, which are the commonly used instruments for nail cutting. Spontaneous (unstructured) observation regarding the appropriateness of foot wear, cleanliness of the feet and the presence of any other abnormalities such as corns and calluses, deformities, ulcers and amputations, were made whilst watching the nail cutting procedure. Further exploration was done around the findings from these observations on completion of the nail cutting procedure.

Method of data analysis

The taped interviews were transcribed verbatim and translated into English, and were taken back to the participants to confirm if the same meaning was retained. The jotted notes were written up in full so as to give a clear description of the observational process.

A data analysis protocol was developed from a combination of

the framework described by Ritchie & Spencer (1994, *in* Baum, 1998: 167-168) and Tesch's (1990) method (*in* Cresswell, 1994: 155) to facilitate uniformity in the analysis of the phenomenological interviews. The analysis process involved the identification of themes derived from the objectives of the study, issues raised by participants and themes that occurred when reading the data. These themes were classified into physical, mental and spiritual and social experiences. Finally, related themes were grouped together and assigned to the two major themes: internal and external environmental experiences. Self-reports and direct observation - guided by a checklist, yielded data on footcare. Two co-coders with extensive experience in qualitative research (with doctoral and masters degrees) were used.

Trustworthiness

Principles described by Lincoln & Guba, (1985: 300) to ensure the trustworthiness of this study were applied as follows:

Prolonged and varied field experience: The researcher is a bonafide Transkeian, and a registered nurse experienced in diabetes care at both primary and secondary health care settings.

Authority of the researcher: The researcher completed a module in research methodology. She attended several workshops on qualitative methods as well as a diabetes management course in preparation for this study. Three supervisors with extensive experience in research guided the researcher in this study. The researcher previously conducted fieldwork for a similar study in another setting under the guidance of an experienced qualitative researcher who holds a doctorate in nursing.

Reflexivity: Field notes were written in relation to a description of the interview setting, the researcher's impression of the informant, observations of non-verbal queues, as well as the researcher's own behaviour, feelings, hunches and interpretation of the whole interview process.

Member checking: The researcher continually tested her data with the participants' during the interviews by asking for clarification. The translated transcripts of the interviews were taken back to the participants to confirm accurate interpretation.

Triangulation of methods: Multiple data collection methods were used such as interviews, observation, and the field notes. Two independent coders analysed data. A combination of Tesch's (1990) method (*in* Cresswell, 1994: 155) and Ritchie & Spencer's (1994, *in* Baum, 1998: 167-168) framework approach was used to develop a protocol for the descriptive content analysis of the phenomenological interviews. Findings were subjected to a literature control.

Dense description and audit trail: A complete description of the research methods has been given and raw data are available.

Ethical considerations

The ethical standards set by the Democratic Nursing Organisation of South Africa (1998: 2.3.1-2.3.4) and the South African Medical Research Council (1993: 32-44), were adhered to in

order to facilitate the ethical approach in conducting this study. Considerations included obtaining informed consent from the hospital authorities as well as from the participants. Privacy, confidentiality and anonymity were ascertained.

Findings

Of the 15 participants, 10 (67%) were women aged between 30 and 64 years (mean age 48.3), and five (33%) were men aged between 49 and 74 years (mean age 61.4). Their educational levels ranged between grade 2 and higher than grade 12, with 53% having achieved at least grade 10 education. Eight (53%) of the participants were either formally or self-employed, three (20%) received either a disability grant or old age pension, and four (27%) were unemployed. Nine (60%) were Christians, five (33%) did not subscribe to any religion, and one participant (7%) was an outright ancestral worshipper. Their marital statuses were as follows: three (20%) were never married, seven (47%) married, four (27%) widowed and one participant (7%) a divorcee.

Internal environmental experiences

The internal experiences related mainly to survival skills; knowledge and insight regarding long term complications; adherence to advised treatment regimes; a variety of health beliefs; and emotions resulting from living with diabetes mellitus.

Survival skills

The survival skills referred to by the participants related to management of acute complications of diabetes mellitus such as hyperglycaemia and hypoglycaemia.

Hyperglycaemia

Participants (n = 14) each recognised at least two of the general symptoms and signs of hyperglycaemia such as excessive thirst, drinking plenty of fluids, polyuria, hunger, generalised body weakness and tiredness. They also discussed relief of their symptoms after taking their treatment, as evidenced from the following citations,

"When my blood sugar is high, I want to drink a lot of water, I just feel thirsty. I pass a lot of urine,..."

Two participants who both had a nursing background as well as a diabetes mellitus duration of 12 and 14 years mentioned blurring of vision. They said, "... and I could not see from a distance, it looked as though there was mist in front of my eyes."

All female participants (n= 9), except one, mentioned suffering vulval pruritis and vaginal discharge as the major manifestation of high blood sugar levels and this is what they said, "I was having vulval itching and a vaginal discharge. ... I mean even now I can't say I feel like this or this as a diabetic person, except the itching vulva."; "... But after the treatment it subsides."; "... I scratch until it becomes painful." "... after every time we had sex I had this terrible itching and funny discharge."; "... I had to avoid coming close to my husband..."

Two participants mentioned experiencing needlelike pains all over their bodies as well as numbness on toes and fingertips

when their blood sugar was raised, "... and the finger tips and toes felt like I was frost bitten."

One participant had complete lack of understanding regarding the signs of diabetes mellitus, "I was coughing so bad, they said I had diabetes. The cough is better now, that's why I have stopped taking the tablets."

Hypoglycaemia

Four participants recognised symptoms of hypoglycaemia such as dizziness, sweating, trembling and mental disorientation. Their responses were appropriate during the hypoglycaemic episodes and this is what they said: "I felt dizzy, I was sweating and my hands were shaking. I left home very early without eating. I was only given sweet water, and immediately felt better."; "When it is too low ... If I can't get food immediately I just make myself sweet water and rest, then I become fine." None of the other 11 participants ever experienced or knew any symptoms of hypoglycaemia.

Knowledge and insight regarding long term complications

All the male participants (n = 5) mentioned impotence and this came out as their major concern, "... except for the lazy gentleman (the penis). If the dog cannot bark, what sees to the security of ones home? That marriage is destroyed moss"

Complications such as lower limb amputations, ulcers, blindness and stroke were mentioned by five participants and were associated with diabetes, but were at a loss as to how to prevent these. They said, "... I was warned by my doctor in Vrystaat that I must avoid any injuries to my feet, or else I will lose them."; "... but he (his cousin) was having sores between his toes and they had to be removed. I would not like that to happen to me."; "But I know that if you neglect your diabetes you may collapse and die, become blind, or even have a problem with wound healing."; "I don't know, but it scares me to think that one day I may have the same thing. I have observed that many patients here in the ward who have this gangrene and others who have been amputated are on diabetic treatment."; "I need to be as healthy as possible. What can I do if I become blind, or have a stroke or have my legs cut off?"; Surprisingly, none of the participants presenting with foot problems associated lower limb amputations with diabetes. One participant associated stillbirths and abortions as well as tuberculosis (TB) with diabetes mellitus.

Adherence to advised treatment regimes

The components of a diabetic treatment regime reported by the participants were diet, hypoglycaemic agents (medication), blood glucose monitoring and physical activity.

Six participants understood the importance of diet as part of their treatment and reported adherence to sensible eating habits. "So I become strict with what I eat. ... I avoid sweetened foods and drinks, I avoid fat meat and I prefer to use chicken, but honestly I like the skin which is supposed to be removed."; "I restrain myself (from eating the forbidden foods"; "Diabe-

tes is not a problem as long as I ... and never miss my meals."; "I am careful of what I eat. I eat small amounts of starchy foods such as rice, potatoes. I don't use animal fat like dripping. I eat a lot of apples and oranges, I used to like bananas, but I realised that they make my sugar go up." Two participants reported factors that prevented them from complying with the recommended diet. These included the unavailability in the local markets, cultural unacceptability and the costs of the recommended foods. "He said I must never use maize meal, instead I must use maltabella or brown bread. I cannot use that for 'umvubo' (mixture of sour milk and 'stiff pap), that is babies' food. You cannot eat what other people eat; you must buy very expensive things, and still have to take a taxi to Umtata to buy these. This grant is not enough."; "But I cannot afford these (recommended foods). I have been retrenched. I suppose it is because I am not eating right, that is why my blood sugar went up." Deliberate non-compliance was found with two participants, "But me, I had diabetes at a very early age, so I do not need tablets. That is my life as a diabetic, different hey? No medical treatment, I eat everything and look at me ... I'm okay, but I warn my patients (she is a homeopath) that they should not eat red meat, poultry only is good for them, and like cancer, a person must do away with fats completely. "; "I never stopped eating my meat at all, and I always take my tea with sugar. Why do they (ward doctors and nurses) give me sugar if I have diabetes?"

All participants understood the importance of complying with their medical treatment, and they said, "As long as I take my tablets nothing goes wrong at all."; "I may die without treatment."; "But now it (diabetes) has become uncontrollable, so I had to be admitted and treated with insulin. ..."; "He (the doctor) stressed that I must never stop taking my tablets because my blood sugar will always go up. But I cannot stop my mixture. So I use the tablets and the injection and my own mixture." One participant was so empowered to the extent of regularly adjusting her own dosages from time to time without consulting a health care provider. "Participants (n=4) who thought their diabetes was not very serious made these comments: "... I am only using tablets, ... And even if I do not take it for a week, I still feel alright."; "But why should I take treatment if the sugar is not high? So, I keep my tablets for that time it goes high again."; "... He also mentioned that my blood sugar was very high, so I have to use this insulin) for as long as it is still high."; "... we (him and his girlfriend) use the same type. We share them. So if she has surplus she gives them to me." One participant exclusively used traditional medicines to control her diabetes "It (the herbal mixture) is my only treatment for diabetes." Although she did not use oral hypoglycaemic therapy herself, she understood the importance of taking it with other diabetics as she cited, "It is difficult to treat those who get diabetes when they are a bit older with my mixture alone, like the 40's onwards. Such people cannot do without the help of the tablets."

The participant who only used her traditional medicine for diabetes reported the importance of blood testing as a measure of controlling diabetes, "I have to keep on checking if my blood sugar is normal, so I go there (to the diabetic clinic) every month." This phenomenon of many African diabetic patients using herbal preparations even if attending 'orthodox' western-style hospital diabetic clinics had been observed by Gill, Mbanya & Alberti (1994: 276).

Only three participants mentioned the importance of exercise in the prevention of complications, one of them said, "... That is why I keep myself active at all times. I have a skipping rope; every evening I use it. On weekends I like walking just from my home to the field, it is about five km from my place." Two of these participants reported physical disabilities preventing them from doing any exercises, "... I used to do some drills (exercises), but now I cannot move them (legs) at all, I cannot bend my knees since I was in a car accident..."; "Of late my legs and knees become painful and swollen and that prevents me now from walking." These comments confirm research findings by Weiss & Hutchinson (2000: 528) that some clients with diabetes mellitus and hypertension ignored physical activity as part of their treatment stating some problems that inhibited them from exercising. Generally, exercise in the context of health has little meaning for the grown ups in the rural areas of Transkei. It is viewed as potentially exacerbating illness or physical weakness.

Fear of developing complications was expressed by three participants, "it scares me to think that one day I may have this thing (gangrene)"; "... and I say no! How can I subject myself to the same pain (amputation and re-amputation),, no... no ... I will not do that."; "I may lose the second foot very soon." One participant who had ulcers and a recent below knee amputation was scared of being rejected by family and friends was prominent among participants "Do you think my husband will be comfortable with me again? What about my children? I so wish I did not have to go back home. How do I face the people who know me?"

Anger resulting from inability to fulfill their roles as breadwinners was expressed by two male participants, and one of them resignedly said "A man must support his women and children, what do I do?"

One participant acknowledged his frustration resulting from dependence on other people for his livelihood when he said "... What do people say about me? In fact I do not want to know. Death is more welcome than this type of life. ... this diabetes is a slow poison, 'iyakucikida' straight away (it tortures you)." On the other hand one participant accepted dependence as a cultural norm during disease episodes. She commented, "... the family takes over your life. You no longer make your own decisions regarding your health. You do as you are told"

Participants (n= 2) who had seen relatives and friends suffering from diabetes related complications, feared suffering the same fate, and as explained by Foster (1997: 56) their previous experiences coloured their view of diabetes. One of them hopelessly said "... like cancer, nobody gets completely cured. ... (silent) I am told that this (gangrenous left big toe) is caused by diabetes. All the people who had this thing never survived... cutting my leg will not change anything...."

Feelings of worthlessness were more pronounced among impotent male participants (n=4). Vmiki's citation (1998: 4) that for many men a limp penis equates with a limp ego and loss of gender identity was confirmed when these men lamented as follows: "... I could not be a man, ... even now I am a woman"; "All the men who have diabetes have lost their manhood. So once a man has diabetes, he must forget about many things."; "... That marriage is destroyed moss. ... "; "... I cannot make

my wife happy."

Lack of understanding the pathophysiology of diabetes and its complication was found to be a source of confusion in two participants. One of them pointed out the confusion brought by health education messages, "We are told that sugar gives you energy, but if you have diabetes sweet things make you feel tired. Why? ..." Some belief systems also caused confusion when participants had to make decisions regarding choices of therapy. One participant who had gangrene of the big toe was in such a dilemma and said "It (the herbal mixture) has stopped this poison from spreading to the whole foot. Now you see, there will not be any need of cutting my leg. ... I am expected to go back to Umtata Hospital next week if I agree to be operated, but I will not, although the pain is unbearable."

Health beliefs

Participants held a wide spectrum of beliefs regarding causation and treatment of diabetes and its associated complications, ranging from magico-religious (witchcraft, ancestral spirits, and God), to the medical scientific conceptions.

Five participants associated diabetes, ulcers, amputations and impotence with witchcraft; hence traditional ways of treatment were sought. "I cannot even... I do not know. I cannot understand why this diabetes was so quick in destroying me. I know many people with diabetes for years and nothing like this happened to them. I suppose I am the first person to have diabetes on the legs. "; "If someone makes you have diabetes, it is like a slow poison. It does not kill you instantly, but will sure do."; "The herbal remedy is very good, it has stopped the poison from spreading to the whole foot." "If it were not for my 'inyanga' (traditional healer) I would not be talking to you now. So if it was diabetes, why didn't that doctor help it, and yet a black man did?"; "But let me warn you. Never leave your nails lying around, the witches use the nails to make people develop ulcers)."

Participants' cultural values were found to influence the participants' (n= 4) attitudes towards diabetes mellitus, its treatment and complications. "The white people cannot cure ethnic diseases. They never give you any medicine (elixir)! Only these tablets?"; "... if I can just visit his grave (her father's) and talk to him, I'm sure every thing will be alright" "I want to come before God complete. Even my (late) husband will not recognise me if I die with one leg."; "Why do they give me free medicines for this diabetes? They know that it will never be cured. A real medicine is never free." In the Xhosa culture before treatment is initiated, a stipulated amount of money (imvulatasi) must be paid to the traditional healer as a way of inviting the ancestral spirits to assist in the healing of the sick person, followed by a final payment when the person is cured (researcher's personal knowledge).

Positive attitudes and well-developed internal health locus of control (n = 5) were found among participants who had diabetes mellitus for periods longer than seven years as well as those who accepted the medical-scientific explanation regarding this disease. They believed that successful control over diabetes mellitus was their personal responsibility. "I will live for more years as long as I take my treatment and eat well, no problem". "You cannot depend on doctors and nurses for the

rest of your life, it depends on you." Acceptance of being a diabetic was mentioned as the cornerstone towards better control, "As from then I accepted the fact that I had diabetes for life. And once you accept that, you become even more open to advice."

Three participants did not take diabetes mellitus seriously. They referred to it as mild or not that strong, and or even thought that they were completely cured. To them serious diabetes meant the use of insulin and severe weight loss. "My diabetes is not so severe"; "I am very thankful because mine is very mild." "The last time I went for a check up they said my sugar is gone." Anderson, Donnelly & Dedrick (1990: 242-243) found that patients treated with tablets or controlled on diet only believed that their disease was less serious than those using insulin, hence their warning to patients that one either has diabetes or not, there is nothing like a touch of diabetes or a mild diabetes. However, five participants considered diabetes a very serious disease, a killer, and likened it with cancer. This realisation motivated some participants to take serious control of their disease, "I had to accept that I had diabetes for life, and if I was not careful I will also die from it." "Diabetes is not a problem as long as I take my tablets and never miss my meals." "But I know that if you neglected your diabetes you may collapse and die, even have a problem with wound healing." whilst in others it fostered hopelessness. "It is a terrible disease, very, very cruel. It does not kill you instantly, but will sure do" "... and like cancer, nobody gets completely cured. All the people with cancer died."

External environmental experiences

Externally experiences related to diabetes mellitus care services in public primary health facilities; and difficulties encountered in workplaces by employees who have diabetes mellitus.

Diabetes mellitus care services in public primary health care facilities

The unavailability of the treatment and the costs of transport to the nearest health facilities, were found to be barriers to proper diabetes mellitus care, thus contributing to defaulting. Nutbeam Thomas & Wise (1993: 51) and Van Rensburg, Fourie, & Pretorius (1992: 30-32) cite similar factors resulting in inaccessibility of health care to those reported by the two participants: "There is always no medicines"; "Our clinic doesn't keep the kind of tablets that I use, so monthly I have to spend about R40.00 on transport to come to Umtata."

Participants (n = 7) criticised the expertise and efficiency of health care providers in managing diabetes in public health care facilities. The following comments were made: "They do not care, nursing here is different from" "Doctors will never admit that they don't know your sickness." "Do they know diabetes? Not a single day have I ever been taught anything there, they do not know how to treat diabetes, they do not care." "Why was I admitted? I'm supposed to be given insulin, I never got it." "I have often been turned back without treatment, because they don't have that machine for testing blood sugar. They cannot give you treatment without knowing how much your blood sugar is. ... I do not have money to come to hospital every time just to check my sugar. There is no use of a clinic then if I still have to pay R60.00 monthly for transport,

and have to pay again in hospital ..." "Nurses are very busy here, they do not have time to talk, talk, talk, no." A professional nurse who also happened to be having diabetes mellitus confessed, "Truly speaking there is no time to teach our diabetic patients. We are short staffed. All we do is dishing out tablets. Moreover, none of us have been specially trained in diabetes management." This comment confirmed the findings by Goodman, Zwarenstein, Robinson, & Levitt (1997: 308-309) that professional nurses without special expertise or adequate knowledge of diabetes are manning most of the primary health care centers.

Employment problems

Diabetes and its complications were found to threaten the participants in relation to their sources of income. Some voiced that development of foot complications would lead to loss of income whilst others had already lost their jobs. These participants said

"...I have a business to run. I must be careful with my feet."; "What else can I do? With 4 children and a husband to take care of, I need to be as healthy as possible. My husband was retrenched 3 years ago."; "At the clinic they punctured the blisters. But since then I have been in and out of hospital, both feet are raw, raw, raw. I had to stop working."

In the face of official non-discrimination policies in workplaces, covert discrimination still exists. Discrimination and labeling was encountered from employers by some, "My boss does not feel good about it. Sometimes her comments really hurt me, like 'sickly staff' or 'those in sheltered employment', you see." Krall, (1992: 1636) identified some veiled difficulties of employment in some occupations for diabetic employees where many become first unemployed in times of higher levels of job unavailability, or find it difficult to get jobs in competition with non-diabetic applicants.

Footcare

Findings on footcare were from self-reports as well as direct observation.

Self-reported footcare

All the participants reported washing and applying emollients or moisturisers to their feet. One or two participants mentioned a few other appropriate footcare practices. These were: keeping feet dry (n=2), always wearing shoes outdoors (n=2), keeping feet warm (n=1), avoiding scratches and injuries (n=2) and cutting nails immediately after washing feet whilst they are still soft (n=1).

Two participants seemed not to value footcare as they carelessly asked, "What else can be done?" and "What is important with feet?" Some participants were experiencing some mild forms of foot problems such as cold feet, excessive sweating, pains and cramps. These participants reported some inappropriate footcare practices such as soaking them in hot water or medicated lotions (n= 3), applying hot water bottles (n= 1), applying powder between toes (n= 1). These were meant to resolve the problems, of which some had disastrous outcomes, and this is what they said, "Of late my legs and knees become painful and swollen and that prevents me from walking. I have to soak them in hot water, put in a little bit of salt, then apply rubbing stuff."; "I always have cramps and pains on the legs

and they also feel very cold, especially during the night. Sometimes I have to sleep with the hot water bottle to keep them warm.”; “I also like putting powder between my toes because I sweat a lot.” My mother decided to soak it (the foot) in hot water. It became like cooked meat, in so much that some pieces of flesh fell off. The whole leg was rotting.”; “... I soak my feet in potassium permanganate solution, and then apply zambuk on this toe (the gangrenous toe).”

Observed footcare

Direct observation of nail cutting was done against a predetermined checklist with eight (53%) out of the 15 participants that were interviewed. This sub sample was composed of five women (62.5%) and three (37.5%) men. Results of the observation process as indicated in (Table 1) showed that: participants (n= 6) who used the correct instrument for cutting nails (a nail clipper) also cut their nails straight across, whilst two men used a razor or scalpel blade; three participants did not cut their nails too short; two did not cut nails down the corners; and four did not dig around their nails with their instruments to remove dirt. All (n = 8) participants smoothed off the nail edges with their cutting instruments so that no rough edges were left.

Surprisingly, the two participants who mentioned the danger of barefoot walking were shoeless during the interview. Their comments, reaffirmed by Vijay, Snehalatha & Ramachandran

(1997:10-12), justified this inappropriate practice as they said: “It will take me a long time to explain why I don’t put on shoes indoors, ... I allowed you to come in with shoes because you are here for an ordinary visit.”; “... but indoors it doesn’t matter.” Although none of the participants wore inappropriate footwear at the time of observation, one participant was found to have purple discoloration of both big toe nails. This was suspected to be a result of pressure from wearing tight shoes.

Guidelines

In view of the findings of this study, the following guidelines, in line with the Working Group of the National Diabetes Advisory Board (1997:502) and the European IDDM Policy Group (1993), are suggested:

Guideline one: Improving the knowledge and skills in relation to diabetes mellitus and its management through education

Patient education must be provided shortly after diagnosis; in the months following diagnosis and at every clinic visit; and in the long term to reinforce periodically (annually).

Table 1: Findings of direct observation of nail cutting by eight participants with diabetes in the rural areas of Transkei

	Participant 2 (Man)	Participant 4 (Man)	Participant 5 (Woman)	Participant 6 (Man)	Participant 11 (Woman)	Participant 12 (Woman)	Participant 13 (Woman)	Participant 14 (Woman)
Correct instrument used	X	X	?	?	?	?	?	?
Cutting nails straight across	X	X	?	?	?	?	?	?
Not cutting nails too short	X	X	?	X	?	X	X	?
Not cutting down the corners	X	X	X	X	?	X	X	?
Not digging around the nails	X	X	?	X	?	?	?	X
Not leaving rough edges	?	?	?	?	?	?	?	?
KEY	YES = ?		NO = X					

Guideline two: Promoting adherence to diabetes mellitus treatment regimes

Counseling must take place in order to promote disease acceptance. During the counseling sessions the value of selfcare and compliance should be emphasised in order to achieve good metabolic control. Treatment regimes should be discussed with individual patients for realistic and achievable treatment goals to be set. Advice should be suited to the patients' culture and understanding. For example it would be inappropriate to advise a housewife in Transkei to go out jogging, whilst the same advice would be relevant for a man from the same area. Also with diet, emphasis should be put on what food items are available and acceptable to the person concerned, not on what is supposed to be eaten. The action of medication should be explained thoroughly to dispel any misconceptions and unrealistic expectations.

Guideline three: Providing emotional support

Individual and/or group counseling should be instituted depending on the individual patient's preparedness. Family involvement is of paramount importance to assist the patient to cope and adjust to the new lifestyle. The family should be given the same information and skills as their diabetic relative so as to be fully supportive and understanding. Patients should be encouraged to form associations (support groups). Nurse should act as co-ordinators in the formative stages of the groups to offer expert advice and counseling. Once the groups are well organised, they should be allowed to run independently, only utilising the nurses' expertise when necessary.

Guideline four: Improving the self-image of persons with diabetes mellitus

Attention should be directed at improving the self-image of the patients, to see themselves as valued members of their families and communities. This can be achieved by educating families, friends, employers and the community at large in relation to diabetes mellitus and its complications. Community Health Workers (CHWs) can play an important role in this aspect as they can also do home visiting. The first step towards boosting their self-esteem would be to involve patients with diabetic mellitus in planning their own care.

Guideline five: Changing health beliefs of persons with diabetes mellitus

Ajzen & Fishbein (1980:81) advise that in order to influence behaviour, we have to expose people to information which will produce changes in their beliefs. It is suggested that changing of long term cultural beliefs should be addressed through health education in the home (home visits) and/or through one-to-one contacts in the community (Airhihenbuwa, 1995:38-39).

Guideline six: Improving the quality of diabetes care in public health facilities

Community Health Workers – known as Village Health Work-

ers in Transkei, should be trained to give education regarding diabetes mellitus in their communities on an ongoing basis, and report to the nurses at the nearest health facility. They can also be responsible for distributing medication to persons with diabetic mellitus in their areas, to minimise the monthly traveling by patients; and monitor the patients by checking blood pressure, urine testing and weighing them. Then patients can only go for medical review at agreed times. The available community resources such as shops and church leaders and other key figures like chiefs and their headmen can be utilised. Employers should be asked to keep the monthly medication supplies for their employees who have diabetes mellitus, and only release them when going for medical review. As the traditional healers are widely used by the majority of diabetic persons, they should be given thorough education on diabetes mellitus. They should be able to recognise manifestations of diabetes and its complications, and refer to the formal health facilities.

Guideline seven: Increase diabetes awareness among employers of persons with diabetes mellitus

Employees should be issued with certificates whenever they present themselves to the health care provider for treatment. The certificate should specify the reason for the consultation as well as the next appointment date. Should the employees experience any problems, the health care provider should make an appointment with the employer in order to discuss the health needs of that particular employee (with the consent of the concerned employee). The employer can even take the responsibility or make arrangements that his/her employees get their treatment at the workplace. Employers should be given extensive education on diabetes mellitus to help them understand why their employees have to continue taking treatment.

Guideline eight: Improving footcare knowledge and skills through education

Footcare education should be structured to offer the following:

- Primary prevention through good metabolic control
- Patients should be given a list of Halpin-Landry & Goldsmith's 'commandments of foot care' (1999: 32) and an explanation of its purpose.
- Detection of patients with foot risk factors (regular surveillance). Surveillance involves: foot inspection for ulceration, deformity, skin and nail conditions and ischaemia; assessment of claudication symptoms and peripheral pulses; assessment of vibration and 'pin prick' sensation; inspection of footwear; and review of selfcare behaviour. Newly diagnosed persons or patients newly presented to clinic with diabetes should have their feet examined at their first clinic visit. Surveillance should be performed annually or more often if risk factors are detected.
- Risk factor management: Primary management once risk factors are found should involve repeated educa

-tion and prompt referral to the next relevant level of healthcare. If amputation does become necessary, education on the use of prosthesis is important, together with special attention to the remaining foot which is subject to new stresses.

Recommendations

Apart from the guidelines, the implementation of the following recommendations can improve the quality of care to patients with diabetic mellitus in Transkei:

Recommendations for nursing practice

The 'supermarket approach' of health care delivery in primary health facilities is not suitable for effective care of diabetes mellitus. The researcher reaffirms the integrated horizontal approach for the control of several different non-communicable diseases recommended by the WHO (1994: 76) and Working Group of the National Diabetes Advisory Board (1997: 510). The integrated horizontal approach entails combining patients with diabetes, hypertension and cardiovascular diseases in one club or group. These diseases are all managed through diet, physical exercise, change in lifestyle and cessation of smoking. In this system chronically ill patients are managed by a separate team of health providers from those attending to acute and minor ailments, hence the nurses can find it easier to educate these patients simultaneously. Staff dealing with diabetic patients must not often be rotated, and preferably nurses that are really interested in diabetes care should run the recommended clubs.

Recommendations for nursing research

It is recommended that a similar study be undertaken in all public health care facilities in Transkei that treat diabetic persons in order to identify any similarities or differences in experiences as well as quality of care. Alternatively a questionnaire can be developed based on the identified themes and administered to a representative sample of persons with diabetes in Transkei to validate the findings of this study. An educational intervention based on the generalisable findings should be developed as soon as possible to ascertain whether it can influence diabetes outcomes favorably. As nurses in Transkei are the bedrock of PHC services, an audit of their knowledge related to diabetes mellitus, their attitudes and practices in the interests of improved public sector primary care for patients with diabetes mellitus is mandatory. This will help identify educational and training needs in relation to diabetes care.

Recommendations for nursing education

All health workers who care for diabetic persons should be trained in the management of diabetes mellitus. The field of care of diabetes mellitus is highly dynamic, and therefore requires the staff to keep up with the rapid changes through regular in-service education, workshops and any available literature. An opportunity must be created for interested nurses to undergo a special course, which will give them the theoretical and practical upgrading necessary to cope with the care of diabetes mellitus. The Diabetes Education Society of South Africa is already involved in the training and accreditation of

diabetes nurse educators.

Limitations

The contextual nature of this study is the major limitation. Its findings are restricted to diabetic patients referred to Umtata Hospital diabetic clinic, with consequent inclusion of only patients from 11 out of 28 districts that constitute Transkei in the study. Each district has no less than 10 clinics, hence the recommendation to replicate the study in all public health facilities. The inability to observe footcare in only 53.3% of the participants further limits the applicability of this study findings to other settings.

Conclusion

In conclusion the study has revealed deficient survival skills; poor knowledge and insight regarding long term complications; non-adherence to advised treatment regimes; a variety of health beliefs; and emotions resulting from living with diabetes. Poor diabetes care services in public primary health facilities; and difficulties encountered by diabetic employees at their workplaces were also reported. Footcare knowledge was found to be very limited. Several inappropriate footcare practices were reported and also observed. In order to describe guidelines for a responsive health promotion programme on footcare, nurses in primary healthcare settings are central to the empowerment of the diabetic patients in Transkei.

Acknowledgements

- Umtata General Hospital authorities for granting permission to conduct the study.
- All the informants for willingly participating in the study
- Lulama Dikweni: Data analysis
- Jean Fourie: Afrikaans translation of abstract

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