

Training Programme for Professional Nurses who Care for Patients with Type 2 Diabetes

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Abstract

Increasing urbanisation and rising unhealthy lifestyle risk factors are contributing to a growing diabetes epidemic worldwide. South Africa like many other countries is continually reporting an increase in the prevalence of diabetes. Education and training play an essential role in the provision of the quality of patient care. In this study, a conceptual framework based on the practice-oriented theory by Dickoff, James, and Wiedenbach was used to develop the training programme for professional nurses who care for patients with diabetes. The aim of this article was to describe a conceptual framework which guided the development of a training programme for the professional nurses who care for patients with diabetes. A mixed-method research design was used. The accessible population for this study consisted of professional nurses who care for patients with diabetes in the three Ga-Dikgale village clinics that are situated in the Limpopo province of South Africa. Purposive sampling was used. Both semi-structured and structured interviews were used to collect data for this study. Diverse levels of knowledge among professional nurses were identified where some professional nurses lack knowledge while others have knowledge related to diabetes. A lack of continuous training on care of patients with diabetes was also identified. Challenges related to patients' socio-economic status, inadequate knowledge about diabetes, misconceptions, denial, and a lack of resources for patient care that leads to poor treatment outcomes led to a framework for a context-specific training programme. There is a need for a



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context-specific training programme for professional nurses who care for patients with diabetes which could improve patient care.

Keywords: development; conceptual framework; training programme; professional nurses

Introduction and Rationale

Diabetes is associated with many complications which include consistently high blood glucose levels, ischemic heart disease, renal disease, visual impairment, peripheral arterial disease, peripheral neuropathy, and cognitive impairment (Rawlings et al. 2014). South Africa like many other countries is continually reporting an increase in the prevalence of diabetes (Malan, Mash, and Everett-Murphy 2015). In 2017, there was an estimated 1 826 100 cases of diabetes (IDF 2019). This burden of disease complications has led to increased workloads, overcrowding at health facilities and poor quality of care, and has exerted a tremendous strain on human resources, especially on the primary healthcare level (Tsolekile et al. 2014). Primary healthcare nurses play an important role in the care of patients with diabetes as they are the first point of contact for patients with diabetes (Abduelkarem and El-Shareif 2013). Appropriate knowledge and skills for professional nurses who care for patients with diabetes and the framework which will guide their practice are essential so that they are well equipped and have guidelines to deal with diabetes effectively (Ahmed et al. 2012). The studies conducted by Abduelkarem and El-Shareif (2013), and Mogre et al. (2015) revealed that nurses lack diabetes knowledge which leads to poor glycaemic control and increased mortality and morbidity related to the disease.

The increasing prevalence of the disease, morbidity and mortality and the complexity of diabetes treatment, including dietary restrictions, the use of medication, and associated chronic complications, emphasise the need for effective training programmes with clear guidelines for professional nurses, in order to adequately meet the demands of care for patients with diabetes (Torres et al. 2010). Education and training play an essential role in the provision of the quality of patient care, improve knowledge, and promote work performance and job satisfaction (Ravari et al. 2015). Although professional nurses are sometimes unable to attend the arranged training sessions owing to work pressure in the clinics and the lack of support from their seniors, the need for training still remain.

Training programmes are necessary to guide the systematic planning process for learning how to build or increase the knowledge, skills and attitude for personnel in different organisations in order to meet the set goals (Sukanjanaporn, Sujiva, and Pasiphol 2015). The conceptual framework of Dickoff, James, and Wiedenbach (1968) was used to guide the researcher during the needs assessment to identify the gaps and challenges faced by the professional nurses so that the relevant content can be organised into the training programme. The goals, performance and change objectives, content,

teaching strategy or method, and evaluation should be clearly dealt with (Nazari et al. 2016). In this study a conceptual framework based on the practice-oriented theory by Dickoff, James, and Wiedenbach (1968) was used to develop the training programme for professional nurses who care for patients with diabetes at the Ga-Dikgale village clinics in the Limpopo province of South Africa.

The research reported in this paper is part of a larger study which was aimed at the development of a training programme for the professional nurses who care for patients with Type 2 diabetes in rural clinics in South Africa. In Phase 1 of the study a mixed-method research design was used to explore and describe the knowledge, experiences and training needs of professional nurses regarding care for patients with diabetes at Ga-Dikgale village clinics in the Limpopo province. This paper involves Phase 2 of the study which focused on the conceptual framework used to guide the development of the programme. Phase 3 discussed the theories used to support the development of this needs-focused training programme, while Phase 4 outlined the implementation and evaluation of the programme.

Problem Statement

A study conducted by Maimela et al. (2015) at the Ga-Dikgale village revealed that training of professional nurses in the Limpopo province is more focused on TB and HIV management and little is done about the management of non-communicable diseases like diabetes which has a high mortality rate. The lack of training of professional nurses on diabetes leads to the delay in screening, diagnosis and mismanagement of the disease, and poor treatment outcomes.

The purpose of this study was to describe the conceptual framework which guided the development of a training programme for the professional nurses who care for patients with diabetes at Ga-Dikgale village clinics in the Limpopo province.

Theoretical Assumptions

- This study was derived from the theoretical assumptions of the practice-orientated theory of Dickoff, James, and Wiedenbach (1968). The developed activity in this study refers to a training programme that was aimed at developing competent professional nurses by the agent at Ga-Dikgale village clinics, Limpopo province.
- The training programme was guided by the following six activities as outlined by Dickoff, James, and Wiedenbach (1968) which are shown in Figures 1 to 6: the agent, the recipient, the context of the activity, the dynamics for successful implementation of the programme, the procedure, and the terminus.

Research Design and Method

A mixed-method convergent or concurrent research design was used with the intent to merge quantitative and qualitative data which were collected concurrently to focus on study aims, the data analysis and comparing the two sets of data and results (Klassen et al. 2012).

The accessible population for this study consisted of professional nurses who care for patients with diabetes in the three Ga-Dikgale village clinics. Purposive sampling was used to include all professional nurses who are working in those clinics. The larger study involved the collection of both qualitative and quantitative data from the professional nurses who care for patients with diabetes at Ga-Dikgale village clinics (Wagner, Kawulich, and Garner 2012). In the qualitative method, semi-structured interviews were conducted to explore the knowledge, experiences and training needs of the professional nurses. The participants were interviewed until data saturation was reached, which occurred when no new themes emerged from the interviews (Wagner, Kawulich, and Garner 2012). The thematic method was used to analyse the data and to formulate themes and subthemes.

In the quantitative approach, structured interviews were conducted using a structured questionnaire to describe the knowledge of professional nurses regarding diabetes. The data were analysed using the IBM Statistical Package for the Social Sciences (SPSS) version 24. Categorical variables were presented as frequencies and percentages. The data were collected over three weeks at the participants' place of employment. The data collected from the two methods were used as a basis for the conceptual framework or the development of a training programme for professional nurses.

Ethical clearance was obtained from the Turfloop Research Ethics Committee (TREC No: TREC/37/2016: PG). Informed consent was obtained from the participants before the start of the interview sessions.

Study Setting

Limpopo is a rural province in South Africa, which is situated on the north-eastern corner of South Africa and therefore shares borders with Botswana, Zimbabwe and Mozambique. The healthcare structure of the province consists of 40 hospitals and each hospital is fully integrated with the nearby clinics. The study was conducted at Ga-Dikgale village clinics that are situated in the Capricorn district. The Ga-Dikgale village is located approximately 50 km north-east of Polokwane, the capital city of Limpopo, and approximately 20 km from the Mankweng Tertiary Hospital. The three clinics provide basic services to all patients including care to patients with diabetes, and are supported once a week by other healthcare professionals such as the doctor and the pharmacist.

A Conceptual Framework used for Programme Development

In this study, the survey list of the practice-orientated theory by Dickoff, James, and Wiedenbach (1968) was used to describe a conceptual framework for the development of the training programme starting from the results of quantitative and qualitative data. The practice-orientated theory included the following programme goals: (1) who performs activities (agent); (2) who are the recipients of the activity; (3) in what context is the activity performed; (4) what is the guiding procedure of the activity; (5) what are the energy sources for the activity; and (6) what is the end product of the activity?

Discussion of the Six Programme Goals

The discussion of these programme goals will be based on the findings of the needs assessment which was conducted during Phase 1 of the study and literature control.

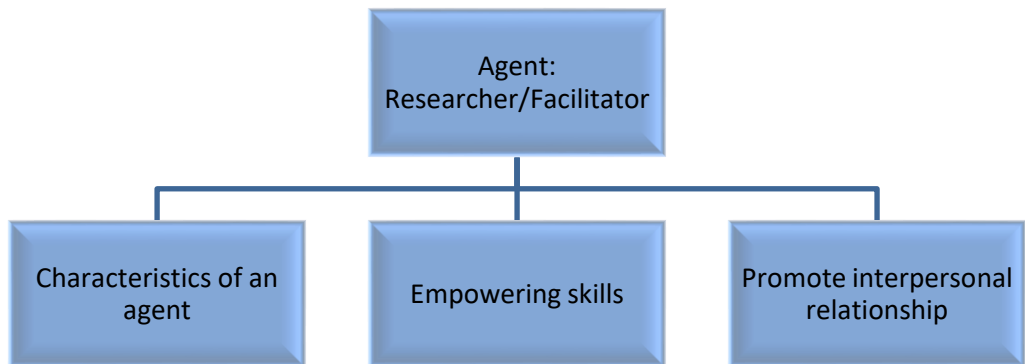


Figure 1: The agent (Dickoff, James, and Wiedenbach 1968)

Who or What Performs the Programme? (Agent)

According to Dickoff, James, and Wiedenbach (1968) an agent is a person who serves an external motivator and who is acting towards achieving an ultimate goal. In this study the agent is the researcher who facilitated the development of the training programme. The agent was responsible for planning, coordinating, and developing the training programme which was aimed at developing the skills of professional nurses during the care they provide to patients with diabetes (Dickoff, James, and Wiedenbach. 1968). The agent organised the venue and facilitators, which included the doctor, pharmacist, dietician and psychologist, and transport to and from the venue. Permission was requested from the district clinic coordinator and clinic managers to allow professional nurses to attend the training.

Characteristics of an agent

The agent was expected to be competent, knowledgeable, and able to influence change. The agent had to be able to design, plan, implement, and evaluate the training programme. The agent also had to be able to guide, support, direct and encourage the recipients; be committed; be able to teach and organise; be initiative-driven, self-motivated and energetic; and have good communication and listening skills (Kamenye, Iiping, and Van Dyk 2016). The participants were motivated to attend and participate actively in order to achieve the goal of the programme development (Kondrič et al. 2013). The participants contributed by giving a starting point of the type of content to include in the programme; this was achieved during data collection when their knowledge and practices were explored. Their inputs assisted in adding the psychologist to the training programme to be one of the trainers during the implementation phase. The agent taught the nurses about nursing management of patients with diabetes and coordinated the whole process of programme development.

Empowering skills

The agent encouraged the recipients to give inputs during the needs analysis and to attend the training (Nangombe and Justus 2016). The participants were motivated to participate during the training to improve their knowledge, skills, and abilities so that they could deal with the challenges experienced by patients with diabetes (Santos and Torres 2012). Therefore, the agent accepted the recipients' contributions to the programme development by indicating their training needs and sharing experiences during the care of these patients.

Promote interpersonal relationships

The agent was able to build and promote constructive and positive interpersonal relationships to improve communication and mutual trust between the agent and the recipients and the other healthcare professionals (medical practitioner, pharmacist, dietician and psychologist) during the implementation of the training programme (Lukolo and Van Dyk 2015). The agent was able to work collaboratively with the participants and other healthcare professionals, as a team, and facilitated that every healthcare professional involved listen to problems encountered by the recipients. The agent encouraged the participants from the three clinics to work together and to respect one another's inputs and ideas to build on what should be included in the programme.

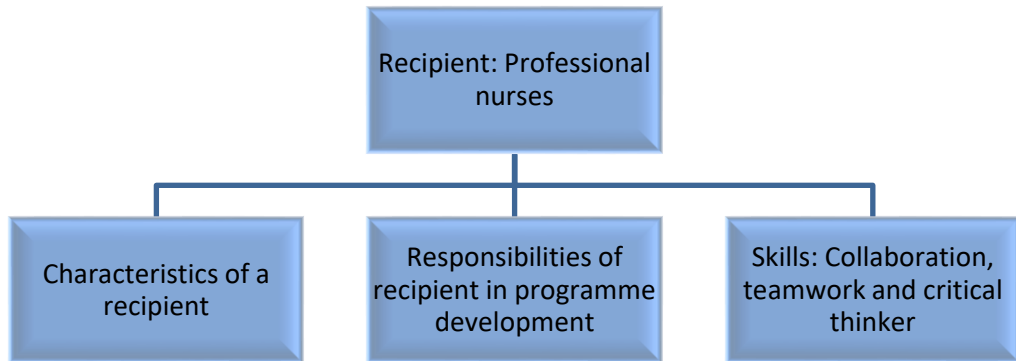


Figure 2: The recipient (Dickoff, James, and Wiedenbach (1968))

Who or What is the Recipient of the Activity?

Dickoff, James, and Wiedenbach (1968) described the recipient as the person(s) receiving the activity. The second programme goal is shown in Figure 2. The recipients of the training were all professional nurses working at Ga-Dikgale village clinics caring for patients with diabetes.

Characteristics of the recipients

The recipients should possess certain qualities for them to benefit from the programme and to participate effectively during the activity (Dickoff, James, and Wiedenbach 1968). In this study, the recipients were the professional nurses who care for patients with Type 2 diabetes at rural clinics in South Africa. The recipients should be able to work as a team and have good interpersonal relationships, communication, listening skills, and be responsible so that they could be able to share their knowledge and practises with the goal of achieving the desired outcomes of a good programme which will cater for all their training needs. To develop the recipient’s skills, Dickoff, James, and Wiedenbach’s (1968) framework guided the agent to include case studies and scenarios in the training programme.

Responsibilities of recipients in programme development

The responsibilities of the recipients (professional nurses) during programme development included a needs assessment through semi-structured interviews where they indicated their experiences and training needs. Additionally, they were given a structured questionnaire to assess their knowledge. Then the training was developed based on the professional nurses’ needs which in turn led to the researcher planning an integrative training programme that included a medical doctor, pharmacist, dietician and psychologist.

What are the skills of the recipients?

The recipients should be able to work as a team, have good communication skills and be able to collaborate as a group. They should also be creative, critical thinkers, have problem-solving skills, be initiative-driven, analytic, and have good listening skills, patience with others and the ability to relate to others with the intention to achieve the planned goals of programme development, which is a provision of quality care to patients with diabetes (Rakhudu, Davhana-Maselesele, and Useh 2017). The recipients were professional nurses with experience of caring for patients with diabetes in the context of this study (Towell, Nel, and Muller 2015).

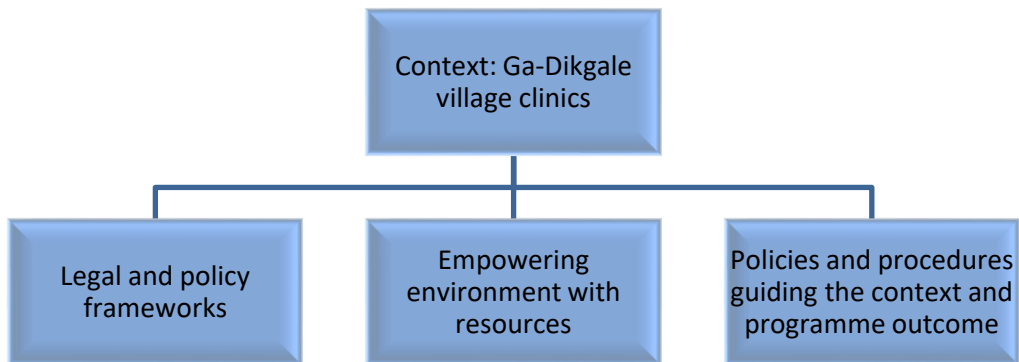


Figure 3: The context of the activity (Dickoff, James, and Wiedenbach (1968))

In what Context is the Activity Performed?

Dickoff, James, and Wiedenbach (1968) defined the third aspect on the survey list as the context where the activity (Figure 3) is taking place. The training programme was expected to be implemented at Ga-Dikgale village clinics where the provision of care to patients with diabetes occurs, instead the training was conducted at a central place which was a booked hotel as suggested by the participants during the semi-structured interviews conducted. The South African Nursing Council (SANC) is a statutory professional body which has the responsibility of regulating the nurse training in the country, therefore the training programme development also focused on the prescripts of SANC which included the scope of practice for the professional nurses and the acts and omissions. The following available guidelines and protocols in the clinics were used: Essential Drug List (EDL), PC101 (Primary Care 101), and the guideline on management of Type 2 diabetes in adults at primary care level, and assisted in achieving the set goals of the development of a training programme. The training programme was developed based on the identified training needs of the professional nurses at Ga-Dikgale village clinics.

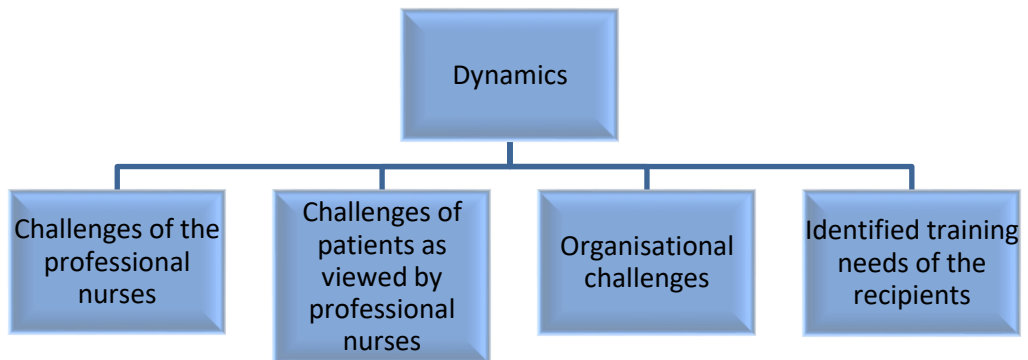


Figure 4: The dynamics for successful implementation of the programme (Dickoff, James, and Wiedenbach (1968)

Dynamics for Successful Implementation of the Programme

Dynamics refers to energy sources of the activities which reside inside an individual or the internal motivating factors for successful implementation of the programme (Dickoff, James, and Wiedenbach 1968). The dynamics in this study consisted of the experienced challenges and the training needs of the professional nurses during the provision of care of patients with diabetes at Ga-Dikgale village clinics. In order to improve quality healthcare delivery, there was a need to deal with the challenges outlined by the recipients during the data collection. The dynamics were divided into challenges related to the recipients, challenges related to the patients, challenges related to the organisation, and the identified training needs of the recipients. In order to improve their knowledge, competencies and skills they identified their needs which were included in the training programme.

Challenges experienced by professional nurses

Challenges faced by the professional nurses include the lack of knowledge regarding the initial assessment and treatment of patients with diabetes, knowledge on when, why and where to refer these patients, and knowledge related to healthcare professionals' patients that are referred in hospital. The findings in this study revealed that the professional nurses have not attended any training since they were employed at the clinics. The lack of training and knowledge regarding diabetes care led to poor patient treatment outcomes and poor management of diabetes complications (O'Brien and Denham 2008; Odili and Eke 2010). According to the professional nurses, as the beneficiaries of the programme, the programme had to include all categories of nurses in the training and the training had to be in the form of workshops or in service-training sessions.

Challenges experienced by patients as viewed by professional nurses

The attitudes of patients to the disease indicated a lack of knowledge pointed out by professional nurses, which was one of the dynamics that assisted in the programme development (Jasper et al. 2014). Patients’ risky behaviours, poor socio-economic status, lack of self-management strategies, denial, misconceptions, and the lack of adherence to medical regimens were identified as some of the patient-related challenges (Kardas, Lewek, and Matyjaszczyk 2013; Stetson, Minges, and Richardson 2017). Training of the professional nurses is hoped to empower patients with diabetes to deal with the identified challenges. Professional nurses are expected to train patients and the community at large.

Organisational challenges experienced by professional nurses

Organisational challenges encountered by the professional nurses during the care of patients with diabetes include the lack of equipment, shortage of medication, delays in repairing broken equipment, the lack of dietetic services in some clinics, and the lack of education and training of nurses to update knowledge and skills. This study concurs with the study conducted by Rushforth et al. (2016) in which the clinicians consistently described limited resources or environmental constraints as barriers to achieving glycaemic control or general aspects of care. Training empowered the professional nurses to deal with the organisation of healthcare, which include ordering of medication and stock. Training needs were identified during the situational analysis and therefore the agent should have the skills to facilitate development, implementation and evaluation of the training programme to meet the ultimate goals of the programme.

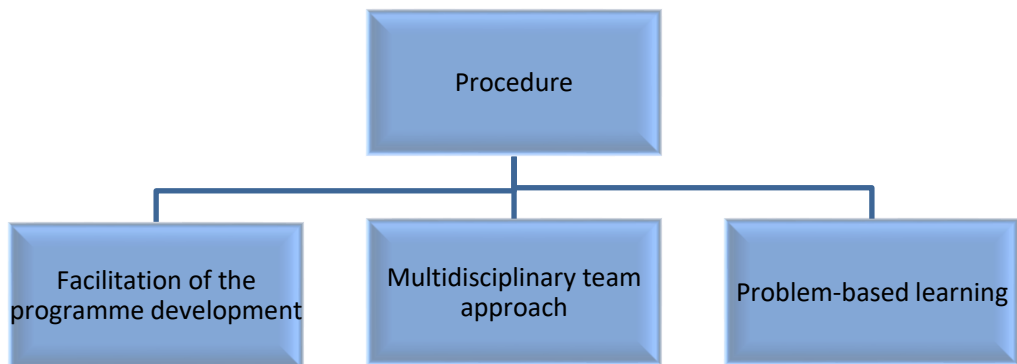


Figure 5: The procedure (Dickoff, James, and Wiedenbach 1968)

What is the Guiding Procedure of Protocol of the Activity?

The fifth aspect on the survey list of the theory in a practice discipline by Dickoff, James, and Wiedenbach (1968) relates to the guiding principles which include the process in the implementation of the programme (Figure 5).

The protocol for the training was fully described with performance objectives and competencies to be achieved. The procedure to be followed in order to achieve the set goals of the programme development was identified during the needs assessment, which guided the procedure for the development of this training programme. The training programme with relevant curriculum content, resources, trainers and the use of optimal flexible training strategies, which included active participation of the recipients, case studies, individual and group activities, peer feedback and role plays, were able to motivate the recipients (Bjerrum et al. 2015). The learning content was aimed to improve the knowledge and practices of the professional nurses in providing care to the patients with diabetes (Jooste and Mothiba 2013). The topics dealt with all the themes that have emerged during the data analysis of this study, namely what is diabetes, the type of diabetes, signs and symptoms of diabetes, medical treatment, complications of diabetes, management of complications, history taking, assessment and diagnosis of a patient with diabetes, initiation of treatment, follow-up treatment, self-management strategies, coping skills, denial and misconceptions related to diabetes, diet, when and how to refer patients to the next level, prevention of Type 2 diabetes, patient adherence to treatment, risky behaviours, emergency care of diabetes, rapid and laboratory blood tests, and the urine dipstick.

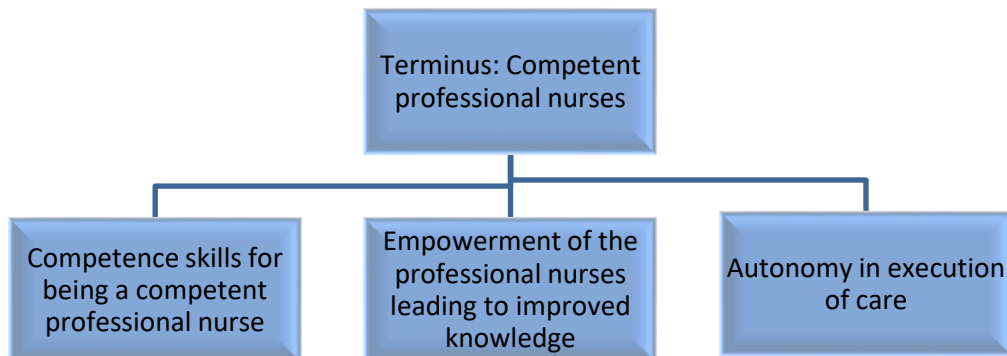


Figure 6: The terminus (Dickoff, James, and Wiedenbach 1968)

What is the End Product of the Activity?

The sixth aspect on the survey list of the theory in a practice discipline by Dickoff, James, and Wiedenbach (1968) is the terminus or the end point of the activity (Figure 6). The terminus is the point where the agent evaluates whether the goals were achieved and all the training needs of the recipients were covered in the programme. The terminus includes whether all the problem-based activities including the scenarios deal with the needs of the recipients and are relevant to the context of the study. The expected outcome of the programme has been met which was to improve the knowledge and practices of the professional nurses who care for patients with diabetes. The specific learning outcomes and general learning outcomes are clear.

Limitations

The study was limited to the three clinics at the Ga-Dikgale village in the Limpopo province of South Africa. Only professional nurses from the three clinics participated in the study; other categories of nurses were excluded.

Conclusion

The discussion above provides the process and the conceptual framework that were used in the development of the training programme for professional nurses who care for patients with diabetes at Ga-Dikgale village clinics in Limpopo. The six elements of Dickoff, James, and Wiedenbach's (1968) practice-oriented theory, namely agent, recipient, context, dynamics, procedure, and terminus were used to guide the discussion during the process of development of the training programme. These steps were used as a basis for the formulation of the conceptual framework that guides the entire process of the programme development. The characteristics and the skills of the agent and the recipients contributed to the success of the programme. The dynamics as the energy source that stimulated the programme development for professional nurses who care for patients with diabetes included the challenges of the professional nurses, the challenges of the patients as viewed by the professional nurses, and organisational challenges, and were identified and discussed. The training needs of the professional nurses were identified based on the needs assessments and the identified challenges.

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