Self-care as a nursing action in the care of patients with diabetes type II in Uganda

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**Acronyms**

DMT2 – Diabetes Mellitus type II

WHO – World Health Organization

NCD – Non-Communicable disease

MFS – Minor Field Study
**Key words**
Uganda, self-care, nursing, diabetes mellitus type II, education

**SAMMANFATTNING**

**Bakgrund:** Egenvård och utbildning i egenvård som omvårdnadsåtgärd är en viktig del i behandlingen av kroniskt sjuka patienter då det bidrar till att patienten blir delaktig i sin egen vård och hälsa samt att det kan förhindra försämring och komplikationer. Diabetes Mellitus typ II (DMT2) är en kronisk sjukdom där egenvård är central och kan göra skillnad för patientens hälsa. Kopplat till ökningen av DMT2 över hela världen, speciellt i låg- och medelinkomstländer, är sjuksköterskor arbete med egenvård och utbildning i egenvård av stor vikt. Få tidigare studier har fokuserat på hur sjuksköterskor i Uganda arbetar med egenvård inom DMT2.

**Syfte:** Syftet med studien var att undersöka hur sjuksköterskor arbetar med egenvård och utbildning av egenvård som omvårdnadsåtgärd för att upprätthålla och förbättra hälsan hos patienter med diabetes typ II i Uganda.

**Metod:** Deskriptiv kvalitativ design. Semi-strukterade intervjuer hölls individuellt med sex sjuksköterskor på en endokrinologisk avdelning samt på en diabetesmottagnings avdelning på ett sjukhus i Uganda.

**Huvudresultat:** Intervjusvaren resulterade efter analys i tre kategorier och en underkategori; *Patientundervisning, Klargöra patientens ansvar, Ta hänsyn till svårigheter samt underkategorin Identifiera behovet av ökad kunskap.* Kategorin *Patientundervisning* beskriver hur sjuksköterskor arbetade med patientundervisning för att bibehålla och förbättra patientens hälsa och vilka huvudområden som ingick i undervisningen för att ge patienten möjligheter att uppnå egenvård. Under kategorin *Klargöra patientens ansvar* visas hur sjuksköterskor arbetar med patienternas förmåga att ta ansvar för genomförandet av egenvård. Kategorin *Ta hänsyn till svårigheter* beskriver vilka svårigheter som upplevdes avseende egenvård och utbildning av egenvård, samt hur sjuksköterskorna hanterade dessa.

**Slutsats:** Sjuksköterskorna upplevde att arbetet med patientundervisning gav goda resultat och bättre hälsoförståelse hos patienterna, fortsatt patientutbildning för patienter med DMT2 i Uganda upplevs därför viktig. Sjuksköterskornas arbete med att klargöra patientens eget ansvar i arbetet med egenvård upplevs som viktigt för att behandlingen ska bli optimal och för att patientens hälsa på lång sikt ska kunna bibehållas och förbättras. De svårigheter som sjuksköterskorna upplevde och som de måste ta hänsyn till var komplexa och relaterade till så väl hälso- och sjukvårdsystemet liksom det omgivande samhället i Uganda.
ABSTRACT

**Background:** Self-care and education in self-care as a nursing action is an important part in the treatment of chronic diseases, since it involves the patients and increases the control of their own care and health. Diabetes Mellitus type II (DMT2) is a chronic disease where self-care is a central component in the care. One nursing responsibility is to educate the patient about self-care. DMT2 is increasing globally, specifically in low and middle-income countries, why nurses’ work with self-care and education of self-care as a nursing action in diabetes care is important. Few previous studies have focused on how nurses work with self-care of DMT2 in Uganda.

**Objective:** The aim of the study was to explore how nurses work with self-care and education of self-care as a nursing action in order to maintain and improve the health of patients with diabetes type II in Uganda.

**Method:** Descriptive qualitative design. Semi-structured interviews were held individually with six nurses working in an out-, or in-patient clinic on a hospital in Uganda.

**Results:** Analysis of the interviews generated three categories and one sub category; *Patient education, Emphasize patients’ responsibilities, Handle the difficulties* and the sub-category *Identify the need for increased knowledge*. The category “*Patient education*” describes how the nurses worked with patient education in order to maintain and improve the patients’ health. The category “*Emphasize patients’ responsibilities*” describes how nurses work to strengthen the patients’ ability and their own responsibilities to maintain and improve their own health. The category “*Handle the difficulties*” describes the nurses’ experienced difficulties related to working with self-care and education about self-care.

**Conclusion:** The nurses experienced that their work with patient education increased patients’ knowledge about diabetes and created a better understanding of the importance of self-care. Continuous patient education and the nurses’ work with emphasizing the patients’ responsibilities is experienced as important in order for the patients to maintain and improve in their health. The difficulties experienced by the nurses in this study were complex and are related to the health care system as well as the surrounding society in Uganda.
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BACKGROUND

Self-care
According to the World Health Organization (WHO, 2009), self-care is defined as follows: “Self-care includes all health decisions people make for themselves and their families to become and remain physically and mentally fit such as eating healthy food, exercising regularly, practicing good hygiene, and avoiding health hazards. People in good health, those who are ill or with disability can engage in self-care.” (p. 4).

In “Self - Care Deficit Theory of Nursing”, nursing theorist Dorothea Orem (2001) defines self-care as a practice of activities individuals perform on their own to maintain health and well-being in everyday life. The self-care ability is central in Orem’s theory, where the main aim is to see to the person’s own ability of and strive towards reaching or maintaining this ability. Orem defines health for a person in being able to maintain this ability, and function together with other persons. The environment around the person can also affect the possibilities to self-care either way and a person can achieve health and well-being through actions of self-care (Orem, 2001). Orem sees every human being as individuals who are capable of thinking and learning, developing and performing all forms of self-care actions in life by themselves. She focuses on the importance of patients’ ability to participate in, and be responsible for, their own care. She also states that managing the self-care needs of patients is essential in the primary prevention of ill-health (Orem, 2001).

The theory by Orem consists of three areas: the theory of self-care, the theory of self-care deficit and the theory of nursing systems. This study will mainly focus on the third theory - “The theory of nursing systems”. Orem defines nursing as determining the self-care needs of the patient, planning the care, and lastly implementing the care (Orem, 2001). She states that the nurse has to define which of the three nursing systems he or she will use when caring for a patient; “the completely compensated system”, “the partly compensated system” or “the supportive and teaching system”. The “partly compensated system” is applied when patients lack some of the ability to perform all self-care actions and are assisted by the nurse to compensate for the lacking ability. Regarding the “supportive and teaching system”, the patient is assumed to take the main responsibility for her self-care, but help in forms of
support and education can be needed from a nurse depending on the patient’s needs (Orem, 2001).

The use of Orem’s theory about self-care can support nurses in their application of self-care in their work with patients. According to Halmo, Galuszka, Langova, & Galuszkova (2015), in using Orem’s “supportive and teaching system”, specialized nurses working with patients with heart failure on a hospital outpatient clinic were able to identify patients’ self-care needs and support them where it lacked. Halmo et al. (2015) concluded that the use of self-care could help lower hospital readmissions of heart failure patients.

Individual self-care is of importance to every person, since it helps to maintain health in the everyday life. For patients with chronic diseases, it contributes to impede complications, and makes them involved in, and gives control of, their own health care. Difficulties in the implication of self-care for patients can depend on different factors. Insufficient knowledge about the disease itself, poor self-esteem concerning the ability of self-care or a lack of belief in a chronic illness are examples of factors that can affect the ability to perform self-care (Strömberg, 2014).

**Self-care of diabetes type II**

Diabetes mellitus type II (hereby called DMT2) is a chronic disease where self-care is an important tool. DMT2 is characterized by high plasma glucose concentrate in the blood and it also affects the metabolism (Almås, Stubberud & Grönseth, 2011). DMT2 is caused by insulin resistance and takes a longer time to develop in comparison to diabetes type I. For a person with diabetes type II, either the cells have lower sensitivity (higher resistance) to insulin than normal, or the pancreas does not create enough insulin, or a combination of these two. This type of diabetes affects mostly older people, and the majority of patients with diabetes around the world has DMT2 (WHO, 2016a). Risk factors such as heredity, obesity, alcohol consumption, smoking, stress, intake of junk food together with decreased physical activity, has an important role in the onset of this type of diabetes (Grefberg, 2013).

The knowledge about self-care is crucial for patients with DMT2, since the majority of the care is performed by the patient, and not by professional health care staff. Most of the major complications of DMT2 can be avoided if self-care can be achieved. For example, daily exercise is something the patients can perform by themselves and thus self-care will be
achieved (Stevens et al., 2015). Educating patients about diabetes (type I and II) have shown improvements in patients’ level of knowledge concerning self-care (Dizdar et al. 2016). Several studies support the importance of self-care and education in the context of diabetes care, in order to promote the health of patients (Kawi, 2012; Lepard, Joseph, Agne, & Cherrington, 2015; Tshiananga et al., 2012).

Self-care of diabetes type II in a global perspective

DMT2 is a global public health disease that during the last thirty years has increased in the world. Due to an increase in risk factors, such as overweight and obesity, it is important to prevent complications of diabetes, e.g. through self-care and education of self-care (WHO, 2016a). Low- and middle-income countries can be more affected by diabetes and its complications than higher income countries because of a lower economy in general. This can be seen in economic losses for families affected by diabetes and give big medical costs that, together with loss of work and wages, will influence the national economy in the country (WHO, 2016a).

Studies suggest that, related to the drastic rise in the prevalence of diabetes, the economical and deadly effects of the disease might soon surpass those of HIV/AIDS globally, if preventive strategies are not put in action (Azevedo & Alla, 2008). Health care facilities in most sub-Saharan countries have most experience in taking care of acute cases and infectious diseases, and have limited experience in handling large proportions of patients with NCDs (Peck et al., 2014). Poor glycemic control is strongly related to diabetic complications and increased morbidity (Azevedo & Alla, 2008). The difficulties in finding affordable ways of controlling blood glucose and achieving easy access to affordable diabetes care is present in most sub-Saharan countries (Sobngwi et al., 2012).

There is a lack of organization regarding how to handle the increased number of patients with diabetes. Peck et al. (2014), Whyte (2015) and WHO (2016c) suggests that many African countries suffering from the effects of HIV could make use of the knowledge and programs in place for the prevention and treatment of HIV/AIDS to apply national programs for the prevention and treatment of diabetes. Uganda is a low-income country with over 39 million residents (WHO, 2015a). As mentioned by WHO (2016a), the prevalence of diabetes is rising faster in low- and middle-income countries compared to high-income countries. The prevalence of diabetes (type I and II) in Uganda is 3,3 percent of the population, and the lives
lost to diabetes in Uganda has increased with over 100 percent since 1990 (Ministry of Health - Republic of Uganda, 2015).

The knowledge of diabetes in Uganda is generally low and it does not exist any registries for the number of patients with diabetes in the country, nor any guidelines for reducing overweight, obesity or physical inactivity (WHO, 2016b). According to the Ministry of Health - Republic of Uganda (2015), policies and guidelines for the treatment of NCDs will be constructed between 2015 and 2020. Treatment of diabetes is costly; as a consequence, this results in untreated diabetes that can lead to several complications of the disease (Whyte, 2015). Baumann et al., (2014) explored Ugandan adult DMT2 patients’ self-care behaviors and their awareness of the disease. The study’s result demonstrates among other things that self-care and a healthy lifestyle is of importance in countries where economic issues affect the ability to buy medication for the disease.

According to the Health Consumer Powerhouse (2014), Sweden is one of the leading countries in diabetes care among 30 included European countries. The Swedish national guidelines for preventing and treating diabetes addresses key areas in the care of diabetes (type I and II). The education of patients in self-care has a central role in the treatment of diabetes. The guidelines also include methods to promote a healthy lifestyle and weight loss, and prevent an unhealthy lifestyle such as intake of alcohol, tobacco, low physical activity and unhealthy eating habits. The patients will set up goals for the management of their disease, together with the nurse specialized in diabetes care and with the help from other professions such as dieticians, physiotherapists, chiropodists and social welfare workers. For the treatment to be successful, it is emphasized that the patients also must be involved in their own care and take responsibility for their health. These interventions, in combination with group education, have proven to be cost-efficient and have resulted in positive effects on the treatment of the patients (The National Board of Health and Welfare, 2015).

**Nurses’ role in self-care as a nursing action**

Battersby et al. (2012) found that healthcare professionals teaching self-care can influence patients to be a part of their own care, and that nurses achieve better patient outcomes than other health professionals. Battersby et al. (2012) and Dorflinger et al. (2013) conclude that the nurse, together with the patient, develops a cooperation to maintain the patient’s health. This is by providing education and being empathetic, whilst motivating the patient to stay
engaged in the plan of performing self-care, which ultimately may improve the quality of life (Halmo et al., 2015). Patients with long-term conditions can be more in need of self-care than patients with conditions that are temporary, since long-term conditions or chronic diseases more widely affects patients’ everyday lives. It is one of the nurse’s responsibilities to support the patient in their care to be able to care for him or herself safely and with confidence (Matthews & Trenoweth, 2015).

By providing adequate information to patients about how to manage self-care and in providing follow-ups, nurses include the patients in their own care. Through helping patients with DMT2 to manage their care, ethical questions such as the autonomy of the patients is also acknowledged. In addition, when the main responsibility of the care is put on the patient, the respect of the integrity is maintained (Friberg & Öhlén, 2014). In order for patients to understand the effects of self-care it is important that patients demonstrate compliance to treatment. In the study by Davidsson & Fahlén (2016) several factors were identified, such as lack of knowledge about the disease, to affect the adherence to treatment for patients with diabetes (type I and II) in Uganda. Bailey et al. (2015) also found that the decision-making about medication and treatment is affected by low knowledge about the disease concerning patients with DMT2 in the USA. By using a form of educational tools, patients became better informed about their disease. According to the researchers, “Improving knowledge can promote diabetes self-efficacy … improve self-care behaviors … which should lead to improved clinical outcomes” (Bailey et al., 2015, p. 2).

Much of previous research focusing on nurses’ work with self-care and education in Uganda focuses on HIV/AIDS, the disease that claims most lives in the country today (WHO, 2015b). There are several studies made focusing on self-care for patients with DMT2. However, there is a lack of studies focusing on how nurses in Uganda work in the area of self-care and the education of self-care in diabetes type II care. According to WHO (2016a), diabetes could be the 7th leading cause of death by 2030. Therefore, it is of importance to explore how nurses’ work with self-care and education of self-care as a nursing action in Uganda.

**Problem statement**

Self-care and education of self-care are important components in nursing, and studies about this in relation to DMT2 and Uganda are few. Patients with DMT2 can improve in their condition by performing self-care. Because of the increase in DMT2 globally, and specifically
in low and middle-income countries, it is important to explore how nurses work with self-care and education of self-care as a nursing action in Uganda.

**Objective**
The aim of the study was to explore how nurses in Uganda work with self-care and education of self-care as a nursing action in order to maintain and improve the health of Ugandan patients with diabetes type II.

**METHOD**

**Design**
A descriptive qualitative design was used (Polit & Beck, 2013[2014]).

**Selection**
The study aimed to include nurses with experience in diabetes care. Purposive sampling was used in order to find participants who possessed the most useful information to answer the purpose of the study (Polit & Beck, 2013[2014]).

**Procedure**
The Department of Public Health and Caring Sciences at Uppsala University in Sweden, and Makerere University School of Health sciences in Uganda has an ongoing student exchange program on bachelors and masters level. The existing study was carried out in the form of a thesis in nursing on bachelors’ level within this program. The co-supervisor on the nursing department on Makerere University School of Health sciences in Uganda introduced the researchers to the head of the involved departments. The departments were chosen regarding the patients they treated. The diabetes out-patient clinic and in-patient ward for endocrine conditions were chosen as suitable for the study, since they were the two departments on the hospital treating patients with diabetes.

On the involved departments at a hospital in Kampala, the heads of departments were asked about nurses available for the study and of approval to conduct the study on the specific department. The interviews were conducted in September 2016. Interviews were held in different locations; in the waiting room, in the nurses’ break room or in the nurses’ office. A
symbolic sum of 10,000 UGX, equivalent to 2,78 USD, was given to all participants who participated in the study for transportation costs and as a symbol of appreciation for their time.

On the day of the interviews, all nurses who were working on the selected ward and outpatient clinic that fulfilled the inclusion criteria were asked to participate in the study. Inclusion criteria were registered nurses with a desired varied range of experiences in nursing and years working in the profession, working with diabetes care on the chosen hospital in Kampala, Uganda.

Five nurses working in the outpatient clinic and one nurse employed the in-patient ward for endocrine conditions were included in the study. The total of six female nurses from the two departments involved had varied range of experiences in the profession of working with diabetes care. The participants’ years of working as a registered nurse ranged between 10 and 33 years. Their time working on the involved hospital ranged between 4 months and more than 30 years, and their time working with diabetes care ranged between 2 and 18 years.

**Data collection method**
Data were collected through individual semi-structured interviews. The interviews were recorded digitally. The first interview was a pilot interview. Since the outcome was successful the result of the interview was included in the study (Holme & Solvang, 1997). The interviews were individually conducted when included nurses were available during working hours, and were held in rooms which at that time were available at the departments. Each interview ranged between 15-20 minutes and was recorded digitally. The researchers interviewed three nurses each. Both researchers were present during the interviews, but only one was responsible of conducting each interview. Every participant was given the researcher’s local phone number in case they had something to add or ask after the interview.

The interview guide was designed based on the aim of the study and on previous studies of diabetes care concerning self-care (See appendix 1). As according to Holme & Solvang, (1997) the questions aimed to be as open as possible to make the participant speak more than the interviewer. If a participant did not entirely understand a question, it was repeated or rephrased, but kept the same meaning as the original question. Probing questions such as “how do you mean”, “tell us more” and “you mentioned before…” were asked continuously
throughout the interviews when appropriate or necessary. This in order to get deeper and more detailed answers from the participants to be able to adequately answer the purpose (Hedin, 2011).

**Processing and analysis**

The interviews were transcribed verbatim by the Administrative Secretary on Department of Nursing at Makerere University and were then read several times to get a better understanding of the material after transcription. A qualitative content analysis by Graneheim & Lundman (2012) was used to process and analyze the interview transcripts. The analysis started with identifying sentence units in the interview transcripts, bearing the aim of the study in mind. The sentence units were condensed and then provided with a code. Codes with similar content were merged to categories. One category contained two subcategories. The results are presented as a descriptive text. The researchers used quotes from the interviews to strengthen the creditability of the result. It is the researchers’ responsibility to find proper quotes to strengthen the validity, and it is the reader who can estimate the validity (Graneheim & Lundman 2012).

<table>
<thead>
<tr>
<th><strong>Table 1.</strong></th>
<th><strong>Sentence unit</strong></th>
<th><strong>Condensed sentence unit</strong></th>
<th><strong>Code</strong></th>
<th><strong>Sub category</strong></th>
<th><strong>Category</strong></th>
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<tr>
<td>“These people, ok, I will not say it is curing but the blood sugars are stabilizing when you educate them continuously, their blood sugars stabilize and they will also tell you when they come back, “oh musaawo (Luganda word meaning Nurse) you made me well, I am now ok” …”</td>
<td>The blood sugars are stabilizing when you educate them continuously</td>
<td>Continuous education stabilizes blood glucose</td>
<td></td>
<td>Patient education</td>
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Ethical considerations

Ethical approval for the study was sought from The Hospital Institutional Review Board (IRB) at Makerere University in Uganda and Uppsala University in Sweden before the data collection begun. Permission to conduct the study on the two departments caring for patients with diabetes was given by the heads of departments and by the medical director of the involved hospital.

The research was designed in accordance with the WMA Declaration of Helsinki concerning ethical principles (World Medical Association, 2013). All potential respondents were informed about the aim of the study and asked to read and sign the consent form to accept the conditions of the study (see Appendix 2). All participation in the study was voluntary. The respondents were informed about the possibility to abort participation without consequences whenever they liked. All participants were informed that the interviews were to be used for the study only and then deleted after the thesis had been finally accepted by Uppsala University. All participants were informed that the finished thesis was going to be available on a Swedish database, and those who wished had the possibility to get a copy of the finished thesis.

RESULTS

The analysis resulted in three categories and one sub-category describing how nurses work with self-care; Patient education, Emphasize patients’ responsibilities, Handle the difficulties
and the sub-category Identify the need for increased knowledge (see Table 2). The results are presented in the form of descriptive categories with illustrative quotes.

Table 2.

<table>
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<th>Sub-category</th>
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<tbody>
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<td>Patient education</td>
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<tr>
<td>Emphasize patients’ responsibilities</td>
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<tr>
<td>Identify the need for increased knowledge</td>
<td>Handle the difficulties</td>
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Patient education

The nurses worked with patient education containing key areas to give the patients the possibility to achieve self-care, and also to strengthen the patients’ empowerment related to their care. The education also aimed to maintain and improve the patients’ diabetes and general health. The patient education could be held either in groups or individually, depending on the level of the patient understanding and the level of previous knowledge.

“we first health educate in a group but if someone comes and they have not understood, then I can sit with you one on one and I can give you furthermore of whatever, because most of us cannot get in a crowd, but when you come to me and you tell me “musaawo (Luganda word to mean nurse) I have not understood this”, I clarify more – I tell you more about diabetes, I ask you questions what you have not understood and I explain further” (Nurse 2)

The nurses focused mainly on education in diabetes, lifestyle, wounds and proper foot care, and medication. The nurses educated patients to give them a greater knowledge about their health condition, since they believed it could make patients more independent in their own care if they understood how diabetes affects the body. Patients were informed about complications related to diabetes and how to prevent them, and risk factors such as obesity, high blood pressure and how to identify hypo- and hyperglycemia.

“When we do self care most of the times with those people one on one, you will find that a lot is improving. These people, ok, I will not say it is curing but the blood sugars are stabilizing when you educate them continuously, their blood sugars stabilize” (Nurse 2)
“...by the time I came here to work on the Diabetic Ward, the population density was high but it has reduced because of the education. We give them health talks about Diabetics and it has helped and it has done a very big deal” (Nurse 6)

The respondents in this study believed education about medication was an important part of their work and the treatment. The nurses experienced that they played an important role in supporting the patients. Some patients expressed a wish to stop taking medications when they kept their diet and regularly took their diabetes medication, since they started to feel better. The nurses emphasized the importance of continuing to take the drugs even when the patients started to feel better, in order to keep the blood glucose balanced.

The nurses mentioned the importance of exercise, but it was not the main focus of the education. The nurses said that one problem was that many patients had sedentary jobs and therefore lacked daily exercise.

Cultural aspects had to be taken into account in the nurses’ work with patient education, since some patients had different beliefs that could affect the treatment. The nurses experienced that some patients had a background in different cultural beliefs or believed in alternative medicines. According to the nurses, some of these patients believed herbs could control the diabetes, with the help from herbalists and traditional healers. Others went to church in the belief that prayers could heal the diabetes. The nurses discouraged these different kinds of treatment.

**Emphasize patients’ responsibilities**

The nurses encouraged the patients to take responsibility for their own care, so that the patients themselves could see their own responsibilities, in order to maintain and improve their health. The nurses experienced that the patients who showed compliance to the education and interest in learning about diabetes and its complications got more encouraged to make a change in their life. These patients also had better results on medical follow-ups. According to the nurses, it was the patients’ responsibility to come for regular medical check-ups and bring food and water whenever they travelled in order to keep a balanced blood glucose. If the blood glucose levels were stable and they maintained a good personal hygiene, patients showed they took responsibility for their own care, according to the nurses.
“Their patients when they are newly diagnosed, they come to hospital, we talk to them they are very, very committed. They follow what you have taught them, they go and have proper diet, give themselves their medicine when they come back their sugar levels are well controlled (...) On the contrary, others they are not committed, they relax, and they feel now injection for the whole of my life; so they are less committed. So those are the people who come to hospital more frequently” (Nurse 5)

According to the nurses, insufficient responsibility from some patients often led to defaulting in the treatment. This was experienced as challenging for the nurses because it sometimes required more care for the patient and changes in the patient’s treatment plan. The nurses put most of the responsibility of the care on the patients themselves. However, some patients were considered to fail in their perceived responsibilities when they received support from the hospital in form of free medication. This could, according to the nurses, make the patients relax in their responsibilities, since they then did not have to make an effort in going to buy the medication from the pharmacy.

The nurses experienced that elderly patients with DMT2 had more challenges in being responsible for their own care. Many of these patients struggled with age related memory problems. The nurses expressed that caretakers who accompanied the patients therefore had an important role in remembering and supporting these elderly patients in their treatment. However, since there were often different caretakers accompanying the patients to the hospital and furthermore helping them in their home, continuity in the treatment and in improving the health of the patients was experienced as challenging.

“because I can come with you to hospital then when I am at home I stay with another person, that person is not the one who was in the hospital, so they do not know and also you cannot explain what the Nurse told you. Then another thing is forgetfulness because they are elderly most of them.” (Nurse 2)

Handle the difficulties

In the nurses’ work with self-care for patients with DMT2, some difficulties were described and had to be considered. The nurses experienced that patients’ poor personal financial situation as well as the hospitals economic situation was something that affected and complicated the nurses’ work in maintaining and improving the health for the patients.
The nurses experienced that patients’ poor financial situation could affect their ability to improve their health. It was, according to the nurses, sometimes hard and difficult to make the patients change their diet, or make them to avoid wounds and in the long run to improve their health. Food rich in sugars and carbohydrates, which should be avoided for diabetic patients, was cheap and available for most patients. The nurses experienced that some patients who lived in villages had difficulties to cook healthy diabetic food and also difficulties to protect their feet from wounds with proper shoes. However, the nurses expressed the importance of continuing health education in order to minimize these difficulties.

“others they still continue either taking sugar like that they even say “aah, I cannot do without taking tea which has no sugar, it is impossible!!”” (Nurse 1)

Money for transportation was an issue for several patients according to the nurses. Most of the patients lived in villages and had a long distance to the closest hospital to go for medical check-ups or to pharmacies for medication. Some nurses said they often gave patients more time between the appointments so that they had time to earn money for transportation. This was one way of trying to solve the problem, and giving the patient a form of support in maintaining their self-care.

The nurses experienced that some patients lacked the economical means to buy medication for their diabetes. The hospital often ran out of medication, and the patients had to go to the pharmacy and buy for themselves, which many patients could not afford. Therefore, the nurses expressed hopelessness because failing the treatment of diabetes can cause hard to treat conditions such as neuropathic complications. This would prevent the patients from feeling wounds, specifically on their feet, and, if not cared for, could lead to amputation. These complications would lead to economic issues not only for the patient, but also for the government.

“sometimes the drugs are not enough. They come here, the drugs are out of stock, they end up without drugs and they do not have the money to buy, so as if you have done nothing if the patient come and you do not give them drugs of course you can health educate, but now even if he eats for example food without carbohydrates but there are no drugs still there is no work done” (Nurse 6)
The nurses’ work was influenced by difficulties at the hospital. The nurses experienced that the hospital lacked in resources such as material and equipment, education for nurses, space at the hospital and staff. This affected their work with education in self-care and in maintaining and improving the patients’ health.

The nurses experienced the issue of being too few nurses as a problem, since they often had little or no time to provide education for all patients. They expressed that they often were stressed over not having enough time for their patients, and also that patients had to wait a long time for their appointments since there were many patients to treat.

“We have very many diabetic patients. Because they are very many and we are few nurses, we just find that we cannot give what we are supposed to give to the patients. So only those who get chance of talking like one to one with the Nurses, benefit and we usually respond to questions that they have asked us. We do not have enough time to talk to them and tell them what they do not know. Like we assume they know yet most of them they do not know.” (Nurse 3)

Identify the need for increased knowledge
The nurses identified their own needs for training and further education to gain knowledge and provide better education for the patients. The nurses stated the importance for them to improve in knowledge and to educate nursing students well, to improve their care for the patients and therefore the health of the patients. The nurses expressed that to increase in their knowledge, they learned from experiences, colleagues and by reading books. The nurses meant that if they could gain more knowledge in diabetes care from further education, provided by the hospital, they could improve in their work and get more knowledgeable patients. They believed that patients with more knowledge in self-care could positively affect their own health.

“Yes, I can improve, because the more I care for those people the more I get experience, the more I learn from them and the more knowledge I get, even with medicine (...) Me, as myself I can improve in knowledge. I can get more knowledge from my fellow staff, yeah from my fellow staff when they are giving also education.” (Nurse 4)
The nurses experienced that when they were committed and worked as a team they could improve the care by exchanging information and experiences between each other. The nurses expressed that if the patients stabilized medically, it served as a motivation for them to also improve. They also said that when patients asked more questions on follow-up appointments or did not come back to the hospital, they knew the patients had increased in their knowledge, which made the nurses satisfied.

"we are supposed to work as a team because if we work hand in hand as a team then there will be massive improvement" (Nurse 2)

DISCUSSION

The results describe how nurses in Uganda use self-care and education in the care for patients with diabetes type II. Three categories and one sub-category emerged from the results.

Discussion of results

Patient education

The patient education about self-care was, according to the respondents in this study, important in their work with diabetes patients in order for the nurses to maintain and improve the patient’s health. This is also supported by Orem’s “Supportive and teaching system”, which emphasizes what nurses should focus on in their work with self-care, such as determining the patients' need for assistance in decision making, behavior control and helping patients acquire an adequate level of knowledge and skills to achieve self-care (Orem, 2001). Among patients with DMT2 in the USA, it was shown that the decision-making about medication and treatment of the disease depended on the level of knowledge about the disease (Bailey et al., 2015).

One-on-one education was, according to the respondents in this study, experienced to be the most efficient and the best form of education for the patients at the hospital. The positive aspects of one-on-one education was also demonstrated by McKinley et al., (2009), where patients with coronary heart syndrome significantly improved their knowledge about their condition following short one-on-one meetings with a nurse. However, the interviewed nurses
in this study stated there was rarely time for patients to receive this kind of education, which is why mostly group education was conducted. Previous research has showed that group education in self-care for patients with diabetes has more benefits for the patient’s health than individual education (Hwee, Cauch-Dudek, Victor, Ng, & Shah, 2014) and can contribute to a better increase in knowledge (Whyte, 2015). In participating in group education, the patient could also be affected by a possibly more favorable environment for learning and expressing thoughts about the disease when being surrounded by peers, as mentioned by Orem (2001). The patients could also be encouraged to interact more with other patients suffering from the same disease, since some patients can have helpful knowledge in how to manage the disease when, for example, glucometers are not available, as mentioned by Whyte (2015).

The respondents in this study focused on the education on knowledge about diabetes, lifestyle, wounds and proper foot care and medication. It could increase patients’ knowledge about how the disease affects the body. This could contribute to make the patients more independent in their own care and encourage changes in lifestyle. The theory about self-care by Orem (2001) promotes first and foremost the independence of the human being and of the patient.

Since diabetes is a disease that needs to be medicated every day, the researchers of this study believe it can facilitate the everyday life of the patients if they have the knowledge to self-medicate, and might also boost the patient’s self-esteem and autonomy. If assuming Orem’s (2001) “Supporting and teaching system”, it is therefore the nurses’ task to provide the patients with this knowledge, so that they can reach the goal of self-care. Nurses who develop a cooperation with the patient can, according to Halmo et al. (2015), help in the compliance to the education and treatment. The importance of a functioning relationship between nurse and patient is also mentioned by Orem (2001).

Regular exercise is a part of proper self-care for all persons in the definition of self-care stated by WHO (2009), and according to Colberg et al., (2010), regular exercise improves blood glucose levels and positively affects the quality of life. Some of the interviewed nurses in this study did mention the role of exercise, but did not give it the same emphasis as in the recommendations from WHO (2016a) or the diabetes education in Sweden. Exercise is a cornerstone in Swedish diabetes care and it is a big part of the treatment of diabetes, since it has proven to reduce the risk of cardiovascular diseases and premature death (The National
Board of Health and Welfare, 2015). Guidelines concerning diet and physical inactivity will be constructed by the Ministry of Health - Republic of Uganda (2015) in the coming years, together with increased skill development for health care workers to manage NCDs. This will hopefully increase the awareness of the importance of regular physical activity in the Ugandan society.

Nurses and other health care professionals have, according to the WMA - Declaration of Helsinki, an important task to promote and protect patients’ health, well-being and their rights - including their beliefs (World Medical Association, 2013). Some patients the interviewed nurses cared for had cultural beliefs which could make them to go off medication, because they believed herbs or other alternative medicine would heal them. This could be an ethical dilemma for the nurses who are aware of the damage it can cause the patient if he or she goes off medication.

*Emphasize patients’ responsibilities*

The importance of self-care in managing chronic diseases is proven by several studies, and so is the importance of the patient’s participation in their own care (Matthews & Trenoweth, 2015). According to Orem’s “supportive and teaching system”, patients who get most of the responsibility for their own care and well-being can take care of themselves better than others and improve their health in the long term (Orem 2001). In accordance with Orem, the interviewed nurses in this study stated that in order to see improvements in the patients’ health, they believed that the patients needed to be aware of their part of the treatment and their responsibility to achieve better health. According to Matthews and Trenoweth (2015), nurses play an important supportive role in the patient’s process of achieving self-care in order for patients to take care of themselves safely and with confidence. Sandman & Kjellström (2013) states that the integrity of the patient can be respected by putting the main responsibility of the treatment of the disease on the patient.

According to the nurses in this study, their patients who had better knowledge about their diagnosis also complied better to their treatment, in comparison to those who had less knowledge about their diagnosis. This issue was also observed by Davidsson and Fahlén (2016) concerning compliance to medication. Through blood glucose controls on follow-up visits, the interviewed nurses could therefore indirectly identify patients who did not engage themselves in the education in comparison to other patients. Battersby et al. (2012)
emphasized the need for the patient to be involved in the decisions about setting goals for their own care, since shared decision making between health care staff and patient was proven to have a greater effect on the treatment and the patient’s adhesion to self-care.

Strömberg (2014), states that a difficulty in the implication of self-care can depend on insufficient knowledge about the disease. The respondents of this study stated that the patients who lacked in responsibility were often the same patients who had difficulties in understanding the education about the disease - elderly patients who had memory problems, for example. Elderly patients were often helped by caretakers who supported the patients with the everyday care, such as helping with medication and remembering the education received from the nurses. For that situation, Orem’s “Partly compensated system” (2001) is applicable. Most of these elderly patients would, however, most probably not regain their ability to perform self-care without support. Orem’s theory’s goal - for every individual to achieve an own ability to self-care (Orem, 2001), can therefore be seen as unrealistic for these patients. The theory is nevertheless applicable, since Orem states that her theory works for every caring situation. The caretakers helped the elderly patients to function as normal as possible, to be as healthy as they could and to perform self-care to their own ability.

**Handle the difficulties**

Economy can affect the patients’ ability to take responsibility for their own care and, therefore, the patients’ ability to perform self-care. This was something, expressed by the interviewed nurses, as something that would affect their work to maintain and improve the patients’ health. Money to buy proper diabetic food, money for transportation to the hospital, money to buy proper shoes and money to buy medication could all be issues for the patients that affected their well-being. When lacking economical means to buy the essential things to handle the disease, the patient’s self-care capacity lowers and the patients can then, as according to Orem’s theory of self-care (Orem, 2001), not sufficiently manage their own self-care needs. This calls for support of some kind in order to manage the self-care needs concerning the disease. It can, however, be more difficult to receive help regarding money, than to receive help such as remembering when to take medication, since in a low-income country such as Uganda, money can be a difficulty for the people around the patient as well (WHO, 2015a). As mentioned by WHO (2016a), patients and their families can be greatly affected by a disease such as diabetes, since it can put a strain on the family’s economy.
When assessing the patients’ self-care ability in accordance with Orem’s “Supportive and teaching system” (Orem, 2001), adequate economic resources to be able to perform the tasks given by the nurses can also be included, since economy is also a part of the patient’s ability to perform self-care. Proper shoes are expensive and this made it more difficult for the patients to take care of their feet, which can result in complications that might lead to amputation (Jeffcoate, Chipchase, Ince, & Game, 2006). One possible reason to why respondents in this study highlighted this subject could be their awareness of the economic consequences following the amputation of a foot or leg.

The respondents in this study experienced challenges when patients were not able to afford medications. These patients did get worse in their disease, which could create additional work for the nurses. In countries with economic issues, it can therefore be more important for the patients to achieve adequate self-care and to have a healthy lifestyle, since medication for treatment can be costly and not affordable for some patients (Baumann et al., 2014). According to Orem’s “Partly compensatory system” (2001), in supporting the patients with, for example, free medication, the patients could get the compensation they needed from the health care in order to care for their disease, until they could manage to buy the medication themselves (Orem, 2001).

The nurses in this study described that the economic situation of the hospitals in Uganda did not always allow the nurses to provide free medication to patients, or to use essential materials like glucometers when taking care of patients. Blood glucose controls play an important role in the treatment of patients with diabetes. Poor blood glucose controls can, according to Azevedo & Alla (2008), increase the risk of more complications and higher mortality for the patients. As mentioned by Sobngwi et al. (2012), the diabetes care in most sub-Saharan countries have difficulties with affording glucometers, which is why it is of importance to find a solution that is both inexpensive and still effective to test patients’ blood glucose level, to prevent further complications or high mortality.

Peck et al. (2014) state that in comparison to the treatment of NDCs, drugs for the treatment of HIV is free of charge because of heavy national and international funding. Azevedo & Alla (2008) mentions that the global burden of NCDs can soon surpass those of HIV/AIDS. It would therefore be desired that actions were taken to prevent the growing issue of NCDs, such as increased international funding. Both national and international economic
organization is needed in low- and middle-income countries to provide nurses and patients with greater abilities to manage diabetes and the care (WHO, 2014).

Results in this study indicated that the information or education to patients was mainly given orally, due to lack of educational materials, something that adds to the experience of caring burden expressed by the nurses. It is possible that informational posters on one hand would be an additional cost for the hospital, but could on the other hand facilitate for many patients; elderly patients who had troubles with remembering information, as well as patients who were not as compliant to information for other reasons, such as lack of interest. Educational materials are given as an example of where the system for spreading information about HIV/AIDS, which is already in place in the country, can be used (Whyte, 2015; Peck et al., 2014). The fact that DMT2 is a growing disease in the entire world (WHO, 2016a), more information about the disease on the radio or other media could possibly increase the awareness of DMT2. An increased awareness about the disease and its complications in the society could hopefully contribute to lowering the number of new patients and thereby ease the workload for the nurses.

The health science concept for nursing includes views on the human, health, nursing and the environment, and they are all linked together and depending of each other (The Swedish Society of Nursing, 2016). Dorothea Orem’s (2001) definition of health states that a patient can achieve health through actions of self-care and the nurses can therefore promote the health of patients through education in self-care and in encouraging the patients to care for themselves, with the support from the health care. The economic issues facing the hospital is therefore a challenge for the nurses, since lack of material, space, staff or medication affects their capability to work with self-care and educate patients about self-care to maintain and improve their health.

Identify the need for increased knowledge
The nurses participating in this study experienced that they could take care of patients more efficiently and better knew how to handle complications that occurred if they received more education about the care they performed. The same results were presented in a study by Wu, Tung, Liang, Lee, & Yu (2014) who states that by knowing more about how to encourage patients to use self-care in their everyday life, nurses could improve compliance to the diabetes treatment and improve the outcome for patients.
As mentioned by Battersby et al. (2012), health care professionals play an important role in patients’ motivation in treatment. The continuous education of nurses is therefore important in order to maintain evidence based practice and, most of all, how to empower and include patients in their own care. Nurses participating in this study mentioned the importance of taking advantage of the knowledge some of their colleagues possessed in order to improve other nurses’ knowledge. This could be done, for example, through meetings on each department, to assess the level of knowledge available and to share knowledge between colleagues. Since group education was the main form of education in diabetes care on the involved hospital, it is possible that it could be valuable for the nurses to increase their knowledge in evidence based group treatment strategies.

A multidisciplinary team such as nurses, physicians, dieticians, chiropodists and physiotherapists, together with proper education in self-care, has been shown to be efficient for example to treat wounds on the feet and reduce amputations (The National Board of Health and Welfare, 2015). According to the participants of this study there were mostly nurses and physicians working together at the involved department. A consequence might be that the specific competences provided by other professions such as dieticians and physiotherapists are lacking in diabetes care in Uganda. This might have an effect on the overall care for patients.

**Discussion of method**

A qualitative design was used for this study since, according to Polit & Beck (2013[2014]), it provides a deeper understanding of what is being studied; participants’ experiences and thoughts. A qualitative content analysis with an inductive approach was used with the intention to analyze peoples’ experiences. This method focuses on interpretations of texts. In nursing research, this type of content analysis is, according to (Graneheim & Lundman, 2012), useful in order to review and interpret texts, such as transcripts of recorded interviews.

Few previous studies have focused on how nurses work with diabetes care in Uganda. A qualitative method, such as the use of research interviews, is a method that aims to explore such subjects (Graneheim & Lundman, 2012). The interviews highlighted experiences and expressions that would have been difficult to capture using a quantitative method.
Purposive sampling was used in order to identify participants who could be suitable to answer the aim of the study (Polit & Beck, 2013[2014]). Semi-structured interviews were used to collect the data and to gain maximal understanding of all participants’ experiences. All interviews were recorded in order to achieve better personal contact with the participant by not taking notes during the interview, to ensure everything the participants shared would be recorded and also facilitate transcription of the interviews. The aim was to interview six to eight nurses working in diabetes care. Data collection was discontinued after the sixth participant due to lack of available respondents. However, the collected data was rich enough to answer the aim of the study.

All data was stored securely in accordance with the WMA Declaration of Helsinki (World Medical Association, 2013) and only authorized persons had access to the research data. To increase confidentiality, each respondent was provided with a code instead of using full names. A semi-structured interview guide with open questions was used to answer the aim of the study and enabled the participants to talk freely about the subject. This allowed the researchers to be co-creators of the result and may have affected the neutral part of the result, but this is however accepted in qualitative studies (Graneheim & Lundman, 2012).

Both researchers were present during the interviews, but since only one of the researchers conducted the interview, it is unlikely that this had an effect on the results. As the interviews took place in different locations, distractions such as sounds from outside the building and staff interrupting could have affected the results.

The recorded interviews were transcribed verbatim including emotions and expressions by the Administrative Secretary on Department of Nursing at Makerere University, who had experience in transcribing interviews and knowledge in different accents of the Ugandan population. This could strengthen the reliability and trustworthiness of the results and thereby contribute to new scientific knowledge (Graneheim & Lundman, 2012).

The reliability (Graneheim & Lundman, 2012) could be affected since the two researchers working with this study had limited previous experience in the field of research interviews. However, the use of a semi-structured interview guide strengthened the reliability of the results. During the whole analysis process a supervisor was involved, thus strengthening the
reliability of the study. Additionally, senior supervisors with methodological experience were involved during the whole research process.

Quotes from the interviews were used to strengthen the credibility (Graneheim & Lundman, 2012) of the results in this study. It is the researcher’s responsibility to find proper quotes to strengthen the credibility, and it is the reader who can estimate the credibility (Graneheim & Lundman, 2012).

Transferability (Graneheim & Lundman, 2012), the extent to which the results can be transferred to other groups or situations, is up to the reader to decide. A detailed description of the respondents in this study, the data collection method and the analysis process facilitates a reproduction of this study.

The co-supervisor from Makerere University and the researchers worked together to identify possible respondents at the hospital. Receiving help from the co-supervisor made the process time-efficient and facilitated contacts. However, this strategy might have affected the participants in their choice of participating in the study. Nurses from both the in-patient clinic and the out-patient clinic were chosen to participate in the study in order for the researchers to conduct six interviews, and also to include nurses with varied experiences. The participant was informed about the aim of the study and asked to read and sign the consent form to accept the conditions of the study (see appendix 2) before the interview started. All interviews took place during the respondents working hours.

**Clinical implications**

This study can be used as a base for knowledge for research and can contribute to developing the care for patients with DMT2 in Uganda. Since Sweden is a high-income country, health care staff might take patients’ ability to buy medication or proper shoes as they suggest for granted. The results of this study can provide Swedish health care staff with a better understanding of some of the economic consequences of diabetes in a global perspective.

**Further research**

To increase the knowledge in the area of self-care of DMT2, further research should focus on patients’ views on self-care and education in self-care, in order to increase the understanding of Ugandan patients’ needs. Also, further research focusing on the needs for effective
interventions and how to use available economic resources in the best way possible is recommended.

Conclusion

How nurses in Uganda work with self-care and education in self-care in diabetes type II is described in the categories Patient education, Emphasize patients’ responsibilities, Handle the difficulties and the sub-category Identify the need for increased knowledge. The nurses participating in this study experienced that their work with patient education increased patients’ knowledge about diabetes and created a better understanding of the importance of self-care. Continuous patient education together with the nurses’ work with emphasizing the patients’ responsibilities is experienced as important in order for the patients to maintain and improve their health. The difficulties experienced by the nurses in this study were complex and are related to the health care system as well as the surrounding society in Uganda. Further work and research focusing on how patients experience diabetes care in Uganda is needed.
ACKNOWLEDGEMENTS

We want to thank our supervisor Lena Hedlund for her support and help during the writing of this thesis and our co-supervisor Lydia Kabiri for her help with the ethical approval in order to implement this research, and for introducing us to the nurses participating in this study.

We also want to thank the nursing department at Makerere University for their guidance and support during our stay in Kampala, and Patricia Kuteesa, Administrative Secretary on Department of Nursing at Makerere University, for her help with the transcription of the interviews.

We want to thank SIDA, the Swedish International Development Cooperation Agency, for giving us the Minor Field Study Scholarship that made it possible for us to go to Uganda and write this thesis. We also want to thank The Swedish Association of Health Professionals for the scholarship they gave us.

At last we want to thank the endocrinology department and the diabetic clinic at Kiruddu Hospital for letting us interview nurses and collect our data. A special thanks to the nurses’ participating in this study for their time and for sharing their experiences and knowledge about the diabetes care that they provide at the hospital.
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APPENDIX 1: interview guide

Probing questions will be asked during the interview when appropriate or necessary, such as:

- Can you develop that thought?
- How do you mean by that?
- Tell us more
- You mentioned before…
- If we go back to what we talked about before regarding… can you think of anything more now?

**Introduction**
- Sex: Male    Female
- Time working as a licensed nurse:
- Time working on this department on Mulago hospital:
- Time working with diabetes care:

**Self-management**
- What does self-management as a nursing action mean to you?

- Can you tell me about what possibilities/intervention of self-management and education of self-management you offer to patients with diabetes type 2?

- Can you tell me about your experience of patients’ commitment to self-management and their knowledge about self-management as a nursing action of diabetes?

- What difficulties/challenges can you see in your work with self-management and education as a nursing action?

- What areas of improvement (what would you like to change) in your work with self-management and education of self-management as a nursing action?

- Do you want to discuss anything further or add something to what we have talked about? (Do you have any questions and additions?)
APPENDIX 2: Consent form

Title of the essay
Self-care as a nursing action in the care of patients with diabetes type II in Uganda.

Investigators
Emelie Arkeberg, Uppsala University, Sweden.
Email: Emelie.arkeberg.5218@student.uu.se
Felicia Michélsen Forsgren, Uppsala University, Sweden.
Email: Felicia.michelsenforsgren.0823@student.uu.se

Background
The self-care of the own health is of importance to every person, since it helps to maintain health in the everyday life. For patients with chronic diseases it contributes to impede complications, and make them involved in and gives control of their own health care. Few studies have been published in Uganda about how nurses work with self-management in diabetes care today. Self-management and a healthy lifestyle is of importance in countries where economic issues affect the ability to buy medication for the disease. Because of the increase in diabetes type II around the world and specifically in low and middle-income countries, nurses’ knowledge about self-management as a nursing action in diabetes care is important.

Objectives
Explore how nurses’ work with self-management and education of self-management as a nursing action for patients with diabetes type II in Uganda.

Procedure
Individual interviews will be held in English with each of the participants. The interviews will take approximately 30 minutes and will be conducted in the afternoon hours after the nurses are done with their day activities. All interviews will, after the approval of the participant, be recorded to facilitate the transcription and analysis of data.

Cost, compensation, risks and benefits of participation
There will not be any costs for you as a participant in this study. A monetary gift will be given to facilitate transport for participants, since interviews will take place after working hours. There will be no risks for you as a participant of this study and participation is voluntary. If you do not wish to continue your participation of the study you can withdraw at any time.
Your participation will make it possible for us to conduct this study. Your individual thoughts and experiences are highly valuable for us and will affect the final results of our essay.

**Statement of voluntariness**
Each participant chooses on his or her own free will to participate in this study. All participants have the right to withdraw from the study at any time without further questions.

**Confidentiality**
Everything that will be said during the interviews will be kept confidential and only used for this research. All interviews and participants will be numbered to ensure their integrity. When the essay is finished, the recorded interviews will be deleted and this form will be destroyed. The final essay will be handed in and later saved in a Swedish database called DiVA (The digital scientific archive) where research publications and student theses can be found from universities and research institutions in Sweden. All participants can get a copy of the finished essay if they would like to.

**Statement of Consent**

*I have read and understood all the information above. I understand that it is voluntary to participate in this study and I can withdraw at any time without questions. I also know that the interview will be recorded. I agree to that the final essay will be saved in a Swedish database for research publications. I understand that the interviews will be kept confidential and then deleted when the study is done. I am aware that my integrity will be kept and that I can contact Emelie Arkeberg OR Felicia Michélsen Forsgren OR Lydia Kabiri from the nursing department of Makerere University with questions that are related to this study.*

If you have any questions or concerns, you may contact Felicia Michélsen Forsgren OR Emelie Arkeberg on email (see above) OR Mariam Namutebi (+256) 759 883 734 OR Lydia Kabiri (+256) 0779429986 OR Mulago Hospital Institutional Review Board Chairperson (Mulago-IRB) (+256) 772 325 869.

*I hereby give my consent to participate in this study. You can use my recorded interview to present the results of the study.*

Your Signature:...........................................................................................................
Date:.........................................................................................................................
R/A Initials............................................................................................................Date..........................
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**APPENDIX 3: Analysis process**

- "Will they have been caring for their families for a long time?"
- "Have folks been caring for their families for a long time?"
- "You went to the hospital on time so that I could have self care also transport to increase knowledge - I learned about the cases we hear here."
APPENDIX 4: Approval letter IRB

Ms. Emilie Arkeberg & Felicia Michelsen Forgenre
Principal Investigators
Uppsala University.

Dear Arkeberg & Michelsen,

Re: Approval of Protocol MREC: 1051; ‘Self Management as a Nursing Action in the Care of Patients with Diabetes Type II in Uganda’.

The Mulago Hospital Research and Ethics Committee reviewed your proposal referenced above and hereby grant approval for the conduct of this study for a period of (1) year from 20th Sept, 2016 to 19th Sept, 2017.

This approval covers the protocol and the accompanying documents listed below;
- Consent form
- Interview guide

This approval is subject to the following conditions:

1. That you state the amount of money of transport refund to the participants and with a minimum recommendation of 10,000/=.
2. That the study site may be monitored by the Mulago research and ethics committee at any time.
3. That you will be abide by the regulations governing research in the country as set by the Ugandan National Council for Science and Technology including abiding to all reporting requirements for serious adverse events, unanticipated events and protocol violations.
4. That you will submit this approved protocol and all accompanying documents for approval to UNCGST before starting the study. In case of studies involving drug and medical devices, approval must be obtained from the National Drug Authority before starting the study
5. That no changes to the protocol and study documents will be implemented until they are reviewed and approved by the Mulago Research and Ethics Committee.
6. That you provide annual progressive reports and request for renewal of approval at least 60 days before expiry of the current approval.
7. That you provide an end of study report upon completion of the study including a summary of the results and any publications.
8. That you will include Mulago hospital in your acknowledgements in all your publications.

I wish you the best in this Endeavour.

DR. NAKWAGALA FREDERICK NELSON
CHAIRMAN- MULAGO RESEARCH & ETHICS COMMITTEE

Vision: “To be the leading center of Health Care Services”

[Handwritten signature]

20th Sept, 2010