**Type II Diabetes Mellitus: Formal Project Proposal**

**Formal Project Proposal**

Type II diabetes mellitus is a condition where the body of a human being is not able to produce enough insulin to control the high blood sugar levels in the body (Piero, Nzaro, & Njagi, 2014). Due to the presence of insufficient insulin resistance in the body, there is a rise in the blood sugar levels. Type II diabetes is one of most common healthcare issues causing serious concern among caregivers across the globe since it affects both the young and the elderly population.

**Practice Issue and he Spirit of Inquiry Ignited**

Evidence-based practice (EBP) is regarded as the best method of providing the highest quality healthcare and ensuring optimal patient outcomes while considering low cost delivery (Melnyk & Fineout-Overholt, 2015). An increasingly large population of children are getting diagnosed with Type II diabetes mellitus. The majority of these patients are using conventional western medicine to control their high blood sugar levels back to healthy ones. However, recent studies are showing that there are several areas of concerns, for example, high cost and adverse health concerns that are associated with the long-term use of western medicine (Menke, Casagrande, Geiss, & Cowie, 2015). This has triggered the need to find look for a cost-effective and a safe alternative method of reducing high blood sugar levels back to healthy ones (Ali, 2015). This has ignited an inquiry into the use of complementary alternative medicine (CAM), a diet consisting of cinnamon as an alternative means of controlling high blood sugar levels back to healthy ones (Matheka & Alkizim, 2012).

**Background Information**

According to Zheng, Ley, and Hu (2018), 9% of the global population were diagnosed with diabetes in the year 2014. Recent reports show that an estimated 29 million US citizens are diagnosed with Type II diabetes mellitus. Out of this population, 90% are diagnosed with type II diabetes mellitus. Type II diabetes mellitus causes a total of 5 million people on an annual basis, and this makes it the seventh killer disease across the globe. This disease is tightly linked to overweight and obesity resulting from lifestyle changes among the middle-income earners. It contributes to deaths through cardiovascular diseases. According to Ali (2015), the management of diabetes is very costly, and it estimated that the global expense of managing the condition is $673 billion.

**Synthesisand Critical Appraisal of the Evidence Performed**

The studies that were chosen and reviewed were synthesized and appraised to facilitate the arrival at a reliable conclusion. During the appraisal the researcher evaluated if the studies could be applied to the research, and also looked at the studies validity and reliability.  The synthesis and appraisal reveal that the use of alternative medicine such as are effective in reducing blood sugar levels back to healthy ones among patients with Type II diabetes mellitus.

In a research study by Uslu and Bayat (2018), it was established that the use of complementary and alternative (CAM) medicine are effective in lowering blood sugar levels to normal and are less associated with side effects as compared to the use of insulin. The researchers concluded that CAM is safe for patients with Type II diabetes mellitus.

In a systematic review of the literature regarding the use of CAM in controlling blood sugar levels, Matheka and Alkizim (2012), established that the use of CAM products includes herbal medicine, mineral and vitamin supplements, acupuncture are safe and effective in reduction of high blood sugar levels healthy one in diabetic patients.

According to a study by Damnjanovic et al. (2015), the findings reveal that an increasingly large number of patients are using medicinal plants to manage their conditions. The use of alternative methods of controlling blood sugar levels has been effective among young patients with Type I diabetes mellitus in developing countries. Based on recent research evidence, the safety associated with the use of natural herbs (alternative medicine) is the key reason they are considered to be more effective than conventional western medicine in controlling high blood sugar levels to healthy one among diabetic patients.

In a cross-sectional study by Medagama, Bandara, Abeysekera, Imbulpitiya, Pushpakumari (2014), it was established that the use of CAM is popular among patients with type II diabetes mellitus in Sri Lanka. 76% of the 252 participants in the study admitted that the use of CAM is effective iin controlling the high blood sugars back to healthy ones.

**Evidence Integrated with Clinical Expertise and Patient Preferences to Inform a Decision and Practice Change Implemented**

The use of Complementary Alternative Medicine (CAM) is currently recommended in the treatment of Type II diabetes mellitus by endocrinologists across the globe. The reliance on a diet consisting of CAM products, Cinnamon, in particular, is effective in reducing high blood sugar levels back to healthy ones among diabetic patients. In a research study that was carried out by Madegama, Banadara, Abeysekera, Imbulpitiya, Pushpakumari (2014), established that the use of CAM was effective in reducing the high blood sugar levels to normal ones among 292 participants. Recent studies show that the oral administration of cinnamon to patients with diabetes type II mellitus on a daily basis is effective in lowering the high blood sugar levels. According to Uslu and Bayat (2018), cinnamon is effective in reducing the level of hemoglobin A1c (HbA1C) by 0.83% among patients diagnosed with type II diabetes mellitus. This is considerably high in comparison to the A1c (HbA1C) by 0.37% reduction in the level of hemoglobin through normal care alone. Cinnamon is effective in the reduction of high blood sugar levels since they consist of naphthalenemethyl and cinnamaldehyde ester derivate. These components play the role of promoting the release of insulin, boosting the sensitivity of insulin, as well as the disposal of glucose. Diets consisting of cinnamon regulates the insulin and PTP1B receptor kinase. Besides, the use of cinnamon in diets to regulate high blood body sugars has no related side effects.

**Purpose of the Project**

The aim of this project is to examine the effectiveness that is associated with the use of complementary alternative medicine (CAM) in the reduction of high blood sugar levels back to healthy ones. The project also aim at validating if the use of CAM is free from the adverse health effects that are associated with the long-term use of conventional western medicine. Therefore, it is the goal of this project is to implement a dietary plan consisting of cinnamon among young patients who are diagnosed with type II diabetes mellitus. For patients visiting the endocrinology department due to health concerns related to high blood sugar levels, there will be oral administration of cinnamon on a daily basis. In addition, the doctors will also prescribe a daily diet consisting of cinnamon for all the young patients who are diagnosed with type II diabetes mellitus for a duration of 12 weeks. Besides the high cost, recent research studies have found that the use of western medicine is associated with several other adverse health issues (Damnjanovic, Kitic, Stefanovic, Zlatkovic-Guberinic, Catic-Djordjevic, & Velickovic-Radovanovic, 2015). In this regard, to improve patient outcome, it is important that an alternative method of treatment should be attempted. A diet consisting of cinnamon will be used in combination with dietary fibers such as cereals and whole grains.

**The PICOT Question Formulated**

In young patients with type II diabetes mellitus (P), are alternative medicines (I) more effective than the conventional Western medicines (C) in the reduction of high blood sugars (O) to healthy levels within a period of 12 weeks (T)?

**Search Strategy Conducted**

The use of the PICOT question guided my search. The data bases used were the Cochrane Library which offered the most articles on my topic. CINAHL, PubMed, and The National Guideline Clearinghouse also had a large listing of scholarly articles to choose from. Key words used in the search were Diabetes, Type II diabetes mellitus prevention, Type II diabetes mellitus management and alternative medicines for diabetes mellitus. From the various articles searched, five were found that support my topic and show that alternative medicines can be effective in reducing blood glucose similar to that of western medicine. Many articles show the reduction in the blood glucose when using alternative medicines verse western medicine with less or no side effects.

**Significance**

The current project will provide patients with type II diabetes mellitus with an effective, safe, and less costly alternative method of reducing their high blood sugar levels back to healthy ones. Recent studies reveal that the use of western conventional medicine is associated with adverse health impacts (Damnjanovic et al., 2015). Western medicine is also costly and a large population of patients from low-income families are not able to afford them.

**Theoretical Framework**

In this project, the common sense theoretical model (CSM) of illness is going to be used. The CSM was developed by Leventhal, when he was investigating the influences of fear messages in chronic conditions and how their negative impacts influence people’s decisions to engage in health-promoting initiatives. This model is aimed at establishing how an individual’s understanding of a health issue and how they implement procedures to cope with the illness (Yu, 2016). To achieve this, the CSM model relies on three key constructs namely, representation of the illness, action plan/response, and the evaluation of the success or failure of the action response. This model also takes into consideration the causes of a condition, the most effective response, and the appropriate timeline for the selected action plan before determining its success or failure. In this regard, it is apparent that CSM model is applicable in understanding the implementation and the evaluation of the success or failure of a diet consisting of cinnamon among patients who are diagnosed with type II diabetes mellitus.

CSM also considers the social, environmental and behavioral factors that contribute to an illness, and hence, it provides an effective basis for evaluating a health implementation plan. In line with this, the CSM model is relevant to the current evaluation plan since it will help in the examination of the behavioral factors that contribute to type II diabetes mellitus and how the behavioral factors can be redefined to curb the illness (Yu, 2016). The selected intervention is hugely dependent on the behavior of the stakeholder identified in the section above. The success or failure of the project depends on the oral administration of cinnamon by the care provider. Additionally, the success or failure of the selected intervention is also dependent on the dietary behavior of the patients who are diagnosed with type II diabetes mellitus.

This model can be used successfully to formulate and establish the validity of the patients’ understanding and interpretation of the health complication that is associated with type II diabetes mellitus (Yu, 2016). This is critical in predicting the patient’s likelihood of adherence to a diet consisting of cinnamon, which finally contributes to the reduction of high blood sugar levels to healthy ones with 12 weeks. The CSM model also emphasizes the self-management, and therefore, it is key to understanding how patients will adopt the use of complementary alternative medicine as self-treatment plan to manage type II diabetes mellitus.

**Clinical Question**

Are Complementary and alternative medicine therapies more effective in the treatment of diabetes mellitus type two than western medicine?

My project will research the epidemic of diabetes mellitus type II in young adults and the most effective way to manage high glucose levels.  My PICOT question I will use in my research is “In adult patients with type II diabetes mellitus (P), are Complementary and alternative medicine therapies (I) more effective than the conventional Western medicine (C) in the reduction of high blood sugars (O) to healthy levels within a period of 12 weeks (T)?”

**Study Design**

**Participants and Setting**

The collection of data will take place for a period of 12 weeks in a large hospital in Houston, Texas. The care providers will target teenage and middle adulthood patients who will come to visit the endocrinology department for regular check-ups for type II diabetes mellitus. This group is a target since they form the larger percentage of patients with poor dietary habits, and hence, the prescription of a diet consisting of cinnamon will help them in controlling their high blood sugar levels to normal ones. The project aim at recruiting at least 10 participants on a daily basis in order to recruit a total of 1000 participants. 1000 is a sufficient sample size that is representative of the sample population.

**Research Design**

A random sampling will be used to pick participants and divide them into two study groups. One group will be subjected to a diet consisting of cinnamon while the second group will act as a control group. The control group will be subjected to the normal care of managing high blood sugar levels that involve the use of conventional western medicine. For one to be included in the study, they must be diagnosed with type II diabetes mellitus. The participant must also be well versed with the English language.

The study will rely on the use of a mixed method of research (MMR). This method entails the use of both qualitative and quantitative research techniques (Creswell, 2014). This method helps the researcher to take advantage of the advantages of qualitative and quantitative techniques. The participants will be given short questionnaires to collect data on their current diet and their methods of managing type II diabetes mellitus. They will them be interviewed before and after the implementation of the selected intervention to determine their attitude regarding the use of cinnamon in the regulation of high blood sugars.

**Instruments**

The Type 2 Diabetes Risk Assessment Tool will be used to detect cases of type II diabetes mellitus among the young patients who will visit the hospital. This tool has been successfully used in the identification of a patient’s probability of developing diabetes (Yu, 2016). Therefore, it is an accurate predictor of type II diabetes mellitus. Questionnaires will also be used to collect data.

**Data Collection Procedures**

To collect data, the researcher will utilize a two phases study during patient visits to the hospital. The first phase involves a survey, where the participants will be issued with brief questionnaires with both closed and open-ended questions. This will be followed by a second phase where the participants will be taken through semi-structured interviews to collect further information on the data collected in the first phase. This is critical since it provides in-depth insight regarding the information collected in the survey (Creswell, 2014).

**Data Analysis**

Data analysis will be performed using SPSS, which is selected due to its efficiency in previous studies. The researcher will perform both inferential and descriptive analysis of the quantitative data to describe the effectiveness or a lack of effectiveness of the use of a diet consisting of cinnamon in the reduction of high blood sugar levels to healthy ones in 12 weeks.

**Confidentiality**

Just like in all other research studies, there is a high need to protect the confidentiality and the anonymity of the personal data of the participants. The privacy of the patient’s identity is vital, and therefore, a lot of cautions should be taken to ensure that the protection and maintenance of the participant’s private details (Creswell, 2014). All the participants will be provided with comprehensive details of the data that will be gathered during the study. They will also be given a specific code that will be utilized to identify them in the process of sampling. The security of the gathered data will be ensure through the use of passwords as well as through the use of EMR servers. The protection of the participant’s private details as well as the adherence with HIPPA regulations will be observed.

**Stakeholders**

For this project, the key stakeholders are young patients who are below 18 years and are diagnosed with type II diabetes mellitus. However, since diabetes type II mellitus is a global healthcare concern that affects individuals of all ages, the elderly in particular, therefore, patients from older generations are also going to be included. It is estimated that 29 million US citizens are diagnosed with Type II diabetes mellitus. Out of this population, 90% are diagnosed with type II diabetes mellitus (Zheng, Ley, & Hu, 2018). It also causes the death of a total of 5 million people on an annual basis. Individuals across all ages are going to be considered since all of them are susceptible to the complications that are associated with type II diabetes mellitus.

According to Melnyk and Fineout-Overholt (2015), one of the major complications of type II diabetes is diabetic retinopathy, which contributes to temporary or permanent blindness. This is a common complication for elderly individuals who fall between the ages of 20 to 60 years. Both the middle adulthood and late adulthood patients of diabetes mellitus are also vulnerable to diabetic nephropathy, which refers to a renal disease that causes renal failure in advance stages of life. Another complication is diabetic neuropathy, which makes an individual lose his sense of pain and touch due to damages of nerves. The young patients who are diagnosed with type II diabetes mellitus are at a high risk of suffering from several other cardiovascular diseases such as coronary heart disease, heart attack and cardiac failure (Menke, Casagrande, Geiss, & Cowie, 2015).

Endocrinologists and nutritionists are also other key stakeholders in this project since they have a critical role to play in its successful implementation. The endocrinologists or care providers examine and diagnose the patients with type II diabetes mellitus. The care providers will also carry out the oral administration of cinnamon to young patients during their regular visits to the hospital. Also with a useful role are nutritionists who will help the care providers in planning and implementing an appropriate dietary plan for the patients during the 12 week period.

**Expected outcome**

Reduced rates of Type II diabetes mellitus among patients who were subjected to a diet consisting of cinnamon within 12 weeks. No adverse health impacts on patients using cinnamon diet as method of reducing high blood sugar levels back to healthy ones. A reduced cost in the management of high blood sugar levels among patients.

**Outcome Evaluated**

The selected intervention; the cinnamon administration by care providers and the subjection of type II diabetes mellitus patients to a diet consisting of cinnamon are safe and effective in the reduction of high blood sugar levels back to healthy ones within 12 weeks. For example, cinnamon was found to be effective in the reduction of the level of hemoglobin A1c (HbA1C) by 0.83% as compared to 0.37% reduction of the same during normal treatment among patients diagnosed with type II diabetes mellitus (Piero, Nzaro, & Njagi, 2014). In this regard, it suffices to state that the CAM is more effective and safe than conventional western medicine in the reduction of high blood sugar levels back to healthy ones.

**Project Dissemination**

The final report will be published in form of a book for the purpose of dissemination to the relevant stakeholders.

**Conclusion**

In summary, type II diabetes mellitus is a major issue of concern among healthcare provider. It is caused by the lack of sufficient insulin in the body to regulate blood sugar levels, as a result, there is a rise in blood sugar levels, making one susceptible to complication such as renal failure. The use of conventional western medicine has been criticized for the adverse effects that are associated with their long-term use. The need for a cost-effective and safe alternative method of managing high blood sugars. To determine this, the researcher developed a PICOT question and used MeSH terms to search for evidence. Recent studies show that the use of CAM such as cinnamon has proved to be effective and safe in the reduction of high blood sugar levels back to healthy ones within 12 weeks.

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