

## What You Can Learn by Exploring the Type 2 Diabetes Risk Assessment Form?

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**Tel:** 050-3119703

**Citation:** Tuula-Maria R (2018) What You Can Learn by Exploring the Type 2 Diabetes Risk Assessment Form? J Diabetes Res Endocrinol. Vol. 2 No.1:2

### Abstract

Prevention of type 2 diabetes mellitus is complex and requires knowledge and skills on the healthcare providers. Nurses are in an ideal position to prevent type 2, both in hospital and community settings. Therefore it is important to increase both awareness and competency in preventing type 2 diabetes already during nursing studies.

The aim of this study was to describe what nursing students can learn by exploring the content of Type 2 Diabetes Risk Assessment Form. The data was collected by analyzing nursing students' learning discussions. Qualitative content analysis was conducted.

According to the result, exploring the Type 2 Diabetes Risk Assessment Form was a useful way to learn type 2 diabetes risk factors and main issues of prevention of type 2 diabetes. Nursing students learned what those risk factors are and they started to innovate solutions what they can do when working as a nurse in an inpatient ward. They understood those risk factors are lifestyle habits and the active counselling for lifestyle changes is what every nurse can do for preventing type 2 diabetes.

The information gained through this study is valuable for developing the nursing education connected with the prevention of type 2 diabetes.

**Keywords:** Type 2 diabetes; Risk Assessment; Metabolic Syndrome; Triglycerides

**Received:** February 02, 2018; **Accepted:** March 03, 2018; **Published:** March 15, 2018

### Introduction

Type 2 diabetes is a national public health problem worldwide. In Finland, approximately more than 300 000 people have diabetes; approximately 80% of them are people with type 2 diabetes. In addition, at least 200 000 inhabitants are estimated to have type 2 diabetes without knowing it. Type 2 diabetes is a costly disease. The annual cost of caring for people with diabetes exceeds 15% of all Finnish health care costs [1,2]. The known risk factors for type 2 diabetes are overweight, hypertension, the history of gestational diabetes, the history of pre-diabetes, the history of cardiovascular disease and the history of diabetes in first-degree relative [3].

Lifestyle changes, including increased physical activity, healthy dietary habits and weight loss, have been shown to be effective in the prevention of type 2 diabetes [3,4]. Many studies have shown the prevention of type 2 diabetes or early diagnosis and

treatment can minimize the risk of long-term complications [4], which are the main reason for the high costs [2].

To prevent the type 2 diabetes, it is essential to find those people at high risk as soon as possible and to provide information [4]. The Type 2 Diabetes Risk Assessment Form, the Finnish Diabetes Risk Score (FINDRISC), which is available online, is the main tool used in Finland for screening people at a high risk of type 2 diabetes. This test, which was developed and designed by Lindström and Tuomilehto [5] from the National Institute for Health and Welfare, Helsinki, Finland, includes eight core questions. It is a fast, simple and inexpensive tool which is easy to use. It is also a noninvasive screening tool for identifying people at a high risk of type 2 diabetes.

The prevention of type 2 diabetes should be a permanent part of health care practices [6]. However, the prevention and the implementation of effective lifestyle interventions in routine

health care pose a very big challenge [7]. In an ordinary hospital inpatient ward, it is even more challenging. Those wards are busy and concentrating on patients' actual health problems, is lead to there is not time or possibility for preventing future conditions or time for lifestyle interventions.

Nurses, as health care professionals, are in an ideal position to prevent type 2, also in hospital [8]. However, both nurses' and nursing students' knowledge in the area of diabetes has been shown insufficient.

Insufficient knowledge acquisition during undergraduate studies will lead to unprepared and unskilled nurses who may potentially provide inadequate care and education to patients [9-12]. Therefore, it is important to increase both awareness and competency in preventing type 2 diabetes already during nursing studies.

The main goal in nursing education is that the registered nurse is able to support people in health and wellbeing promotion, the maintenance of health and care for the ill in a holistic way. Learning to be a nurse includes both evaluation of prior knowledge and conduct new knowledge in a reflective and critical way [13]. In nursing education, the curriculum consists of several study modules. During the middle phase of the studies, the student develops his/her clinical know-how in different areas of nursing, for example medical nursing. The one main learning outcome is that student, the becoming nurse, is able to guide and support people and families in issues concerning health promotion, in different stages of illness and in self-care. The prevention and treatment of diabetes is one theme during a medical nursing module.

The aim of this study was to describe what nursing students can learn by exploring the content of Type 2 Diabetes Assessment Form, the FINDRISC.

## Method

The data was collected by analyzing nursing students' learning discussions in their electric learning environment. The instruction for this discussion was: Explore the Type 2 Diabetes Risk Assessment Form FINDRISC. What can you do for preventing type 2 diabetes when you are working as a nurse in an inpatient ward?

Altogether 42 nursing students took part in this learning discussion during two weeks period. There were 243 discussion episodes in this topic. The data from learning discussions was analyzed by using inductive content analysis [14]. First, learning discussions were read line by line several times, writing headings in the margins. Then those headings describing all aspect of the content were collected on the coding sheets. After that, headings were grouped and subcategories were generated. Then subcategories with similar incidents were grouped together as categories and categories were grouped as the main categories.

Approval for this study was gained by the Head of Nursing Education in University of Applied Sciences. The participating nursing students were provided with written information.

## Results

Altogether 243 discussion episodes by 42 middle phase (second year) nursing students' were analyzed. Four main categories describing nursing students' discussions were found: learning risk factors easily, you can really affect solutions for the prevention and barriers to the prevention.

### Learning risk factors easily

The type 2 Diabetes Risk Assessment Form was described in order to be very informative and including a lot of information in spite of it is short and includes only eight questions. First, the form was described including useful information on the health history of the person, for example the history of gestational diabetes or history of diabetes in first-degree relatives. Secondly, it was described including the information connected to the lifestyle habits of the person. By exploring the assessment form learning the risk factors of type 2 diabetes was experienced easy.

"For the first sight, I learned what the risk factors of type 2 diabetes are".

The role of different risk factors was also learned. The risk factors cannot affect which were found (the age, the history of gestational diabetes, the history of diabetes in first-degree relative) and risk factors can affect which (BMI, the waistline, eating vegetables, fruits and berries, physical activity, blood pressure) were found as well.

"I understood developing the type 2 diabetes cannot be explained by genetics alone, lifestyle plays a crucial role".

### You can really affect

By exploring the Type 2 Diabetes Risk Assessment Form participants described, they found there are many risk factors you can really affect. By exploring the score and by changing answers, they also learned how those risk factors influence. For example, more overweight means more points and bigger personal risk to develop type 2 diabetes. Participants had compared, how it influences if someone eats vegetables, fruits and berries every day versus someone does not eat. So, it is easy to become aware of how you can influence your risk. By making changes to lifestyle habits (healthy eating and physical activity), the risk for developing type 2 diabetes is smaller.

"I noticed, you get more points if you eat unhealthy or you are physically passive".

"You really can lower your risk".

### Solutions for the prevention

Different kinds of solutions for preventing type 2 diabetes were found. The diverse use of the Type 2 Diabetes Assessment Form was the one. Finding the form both online and papery version makes it easily accessible and easy to use. It is short enough and you do not need much time to fill it. In addition, the questions are easy to understand. Only challenging is the waist circumference, you need measuring tape when answering in that question.

Keeping the assessment forms and measuring tape easily available for everyone would be useful. Participants described every inpatient ward in hospital should have a place where patients could fill the form and where written material is available. The form was described being some kind of wake-up for every one about his/her personal risk for type 2 diabetes. Especially those combined points clearly tell your risk. Consequently, the form itself is a tool for the prevention of type 2 diabetes.

The type 2 diabetes Risk Assessment Form is also a useful tool for nurses when collecting anamnesis from the patient. Nurses could benefit that information when planning nursing interventions.

“The form includes useful background information from the patient”.

Interventions which are easy to implement in an inpatient ward routine were planned. Focusing on one key risk factor at a time considered adequate in an inpatient ward. For example, telling how to keep weight as normal as possible by dietary recommendations was mentioned. In addition to spoken patient education, there should be written material, pictures and posters patients available. For example, a poster including the healthy lifestyle information both with words and pictures should be on the ward's wall where everyone can see it. Special subject day or week should be arranged in a ward. Different lifestyle interventions were described having many benefits to the overall prevention of chronic diseases not only for type 2 diabetes.

One solution was that every inpatient ward should nominate the person in charge for the prevention. This person could have more specific detailed knowledge connected with the prevention of type 2 diabetes and could educate herself continuously. She could also work as a mentor to the other nurses.

### Barriers to the prevention

Participants described different kinds of barriers to the prevention. Lack of sufficient time was the most challenging barrier to the prevention of type 2 diabetes. Inpatient wards in hospital are often quite hectic, patients have many acute problems or in a ward there are not enough personnel. Inpatient wards were described environments where nurses do not prevent new diseases, they treat existing diseases.

Insufficient knowledge was mentioned being a barrier as well. Bedside nurses do not know of the existence of the FINDRISC or they do not know how to utilize that. The knowledge connected to the healthy lifestyle education is maybe insufficient. In addition, attitudes toward the prevention may be negative. Nurses may think they cannot influence someone's lifestyle habits or they think interventions requires a lot of time, which they do not have in an inpatient ward.

In addition, organizational barriers, like the lack of support from the manager or the challenges in work distribution, were mentioned.

## Discussion and Conclusion

The prevention is nowadays a part of health care. During nursing

studies, it is important to learn what every registered nurse can do for preventing diseases. One purpose of nursing education is to increase nursing students' competence in assessing risk factors for different kinds of chronic health problems and advising patients connected to the prevention diseases. The exploring the Type 2 Diabetes Risk Assessment Form (the FINDRISC) was a successful way to reach this purpose.

By exploring the FINDRISC nursing students learned which the main risk factors for type 2 diabetes are. They realized many of those risk factors are lifestyle habits and a person can affect which. In addition, they realized the active counseling for lifestyle changes is what every nurse can do for preventing type 2 diabetes. Current guidelines recommend that patients at high risk for type 2 diabetes participate in lifestyle modifications, which have been shown of benefit in decreasing the risk of diabetes [4]. In addition, the exploring the FINDRISC was a useful way to learn the crucial content of interventions when preventing the type 2 diabetes. For example, overweight is one risk factor so the intervention should include the main points of weight management. One part in type 2 diabetes prevention is the implementation the type 2 diabetes risk screening for every day nursing routine. As the study of Madden et al. [15] showed, at-risk population can be targeted. In this study nursing students described how they will do it. Exploring the form would be useful for those registered nurses who work in inpatient wards as well. Further research is needed how registered nurses utilize the type 2 diabetes risk screening in their routine work.

As earlier studies have been shown [3,4,16] the prevention of type 2 diabetes is possible, however it is necessary to focus on different strategies [17]. In this study, nursing students described some innovative strategies when working in an inpatient ward. According to the results, some barriers were described as well. Those barriers were similar to Jones et al. [7] found in their study. Further research is needed connected with the nursing students' working in out-patient environment.

Different chronic diseases and conditions often share the same risk factors. Those risk factors can be effectively managed. By learning the risk factors of type 2 diabetes, nursing students learned in a fact much more. Some risk factors of type 2 diabetes are risk factors for other chronic diseases' as well [18].

Nursing curricula need to ensure an adequate emphasis on the prevention of diabetes and other chronic diseases. There is always room for improvement educational content and teaching pedagogies and increase student's engagement in learning the prevention. Greater theoretical knowledge among nursing students will potentially translate to better-prepared future nurses and improved outcomes for the prevention of type 2 diabetes. The information gained through this study is valuable for developing the nursing education.

In nursing, we use different Risk Assessment Forms; further research is needed how they could be utilized during nursing studies.

## Limitations

There are some limitations in this study. In this study, the author

had professional experience about diabetes nursing and it might have some impact on the interpretation of the data. In addition, the expert panel was not used to support the concept production.

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