Original Article

Investigation of the Knowledge of Nursing Students and Nursing Assistants' Students on Diabetes Mellitus II and its Prevention

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Abstract

Introduction Diabetes Mellitus type II (DM II) is a chronic metabolic disorder that is a global public health problem. The knowledge of young people studying nursing towards DM II are key factors in controlling the disease outbreak.
Aim: The aim of this study is to investigate the knowledge of Nursing students and Nursing assistants' students about the DM II and its prevention and to identify the factors that affect the disease.
Population and Method This is a thorough study of the current time. The population of this study consisted of 269 young people studying nursing who were asked to answer 62 questions of a questionnaire which investigated the general understanding of diabetes II. The general perception scale consists of three sub-scales: the sub-scale of DM II knowledge, the sub-scale of knowledge concerning the predisposing factors of diabetes II and the sub-scale of attitudes towards Diabetes II. The results of the first two pre-mentioned sub-scales are presented in this piece of work. The questions were planned so as to be answered through a Likert type four-grade scale.
Results The level of perception of the investigated population pertaining to the dimensions of this disease was high. (Average 99,24). Women, older students, people who were aware of the Mediterranean diet and followed it and those who did not often consume processed food exhibited a better understanding. More extensively, the average agreement with the propositions which constitute every sub-scale of the general understanding were: the sub-scale of knowledge concerning Diabetes II 36,71 and the sub-scale of knowledge concerning the predisposition factors of diabetes II 41,03.
Conclusions The students' level of knowledge concerning Diabetes II and its prevention can be characterized as quite high with certain deficits in some fields. The nursing students are the future health professionals and their program of studies must place emphasis on their knowledge deficits, modifying the curriculum so as to aim at the needs of the people who suffer from Diabetes II.

Key words: Diabetes Mellitus II (DM II), knowledge, students, health professionals

Introduction

Diabetes mellitus (DM) is a metabolic disorder accompanied by serious complications that reduce the patients' quality of life and their life expectancy resulting in being a major public health problem. DM is:

• the first cause of blindness in the Western world

• the first cause of renal insufficiency

• the first cause of non-traumatic leg amputation and coronary artery disease

• the fourth cause of morbidity and the seventh cause of mortality (American Diabetes Association, 2014)

It is estimated that people with DM have 5-10 years of lower life expectancy due to complications (American Diabetes Association, 2008). In addition, they have a worse prognosis than patients suffering from other diseases, resulting in longer-term hospitalization accompanied by all its consequences (Audit Commission, 2000). It is well known that the incidence of complications in patients with DM differs between patients with comparable duration disease and similar glycemic control. Therefore, it is very likely that there is a genetic basis in the occurrence of microvascular and macrovascular complications (Georgitsi & Paschou, 2016).

The Pandemic of DM is partly due to increased calorie consumption and reduced or no physical activity. So, it is obvious that the pandemic of obesity is preceded by the Pandemic of DM. Lifestyle's change to prevent DM in high-risk individuals is particularly effective. Several studies have highlighted the benefits of exercise in both preventing and treating this metabolic disease. But in USA, less than half of health professionals provide clear information and guidance to patients about diet, exercise or weight control, although WHO predicts that by 2020 two-thirds of the world's diseases will be a consequence of unhealthy lifestyle (Pojednic & Frates, 2015). The above conclusion has been substantiated by an earlier American study showing that only 31% of non-diabetics had information from health professionals about the role of exercise in prevention, indicating that the population was unaware of exercise as a preventive measure (Morrato Et al., 2006).

Foundation element for the prevention of DM is the knowledge of the predisposing factors that can be modified (Matte and Velonakis, 2011). Chronic microvascular and macrovascular complications of DM could be avoided or developed slowly with appropriate preventive measures (Marshall et al., 2003). It is also important for patients to be aware of the basic characteristics of the disease, predisposing factors and to be guided to adopt a healthy lifestyle and change habits and behavior (Boavita, 2013). Knowledge, therefore, about self-management programs is of utmost importance (Glasgow et al, 2008).

Knowledge is defined as "believe" about the reality of an event, phenomenon or object that one can acquire through study and observation. A person can acquire knowledge both through education and practice, which is directly related to research, innovation and new technologies (Hatziakov, 1992). It is important, therefore, that all those involved in health issues understand that setting up of educational programs to prevent the diagnosis, early diagnosis and avoid complications, will bring significant long-term social and economic benefits by changing the natural history of the disease (Eborall et al., 2007). The purpose of these programs is to delay or prevent the occurrence of DM II.

Measures helping in achieving this goal and contributing at the same time to its treatment should include: a) balanced diet b) physical activity and regular exercise c) stress management d) self-testing (blood glucose and ketone measurement) f) smoking cessation. Each of these components contributes to good glycemic control. Furthermore, It is also important that the family is involved and educated to the correct treatment of the disease (Demodorakis, 2011, Hellenic Diabetological Society & EKED, 2012).

In the prevention of the DM II that tends to experience epidemic features, health practitioners play an essential role, as already mentioned. Nursing students are the next healthcare professionals who will provide future care to people with DM. The study of knowledge of young people studying Nursing is important, because they will be those who will care for and educate patients and healthy people about health problems, because of their profession. Therefore, they can exert a positive influence on the

community and help with their knowledge in minimizing the problem. It is very important to evaluate their knowledge of DM, which also reflects the future management of the disease.

It is interesting in the context of this study to show young people's knowledge about DM II and its prevention, and to explore independent variables regarding their demographic characteristics, dietary and exercise habits. It is important to investigate whether there is a correlation relationship based on the above theoretical framework in order to improve their education and to cultivate positive attitudes towards DM II.

Health professionals' knowledge about Diabetes Mellitus - Background

The review of the literature on the health professionals' knowledge of diabetes reveals that studies results differ, but they all end up in a common point: a lack of knowledge on some issues exists even where it is found that the general knowledge about diabetes mellitus is sufficient. Below are indicative results of some of these studies.

A study conducted in the United States studied the real knowledge of nurses and compared them with the knowledge they believed they had. The findings of the study showed some deficits in nurses' knowledge of the DM and questions were raised about their ability to evaluate themselves. The knowledge they believed they had was inversely related to the knowledge they actually had (Drass et al, 1989). The same conclusion came out several years later by the study of O'Brien et.al (2003), which was conducted in Prescot, UK, and it studied the knowledge of general nurses and newly appointed doctors. In contrast, Findlow and McDowell (2002) study also conducted in the United Kingdom and studied the knowledge of 161 nurses, concluded that the majority of nurses had good knowledge of the DM, but again certain small deficits were found in some fields.

A few years later, in 2007 in a study conducted at Thomas Jefferson University Hospital in Philadelphia, United States, about the knowledge of nurses and physicians in the DM, it was found that the knowledge of the studied population was not sufficient. Researchers have concluded that additional health education is required to provide adequate care for patients with DM (Rubin et al, 2007). In the study of Muntaz et al (2009), in which 366 medical students from Ziaudin University, Karachi Pakistan, were included, the results were different. They showed that the students' knowledge of DM was sufficient. Men had better knowledge than female students, but women had a more positive attitude towards DM comparing to men. Deficiencies in their knowledge, particularly related to the epidemiology of DM, have also been shown in this study. The researchers pointed out that medical students are future physicians, so the university curriculum should emphasize the better education of students in order to be able to cope with this epidemiologically significant disease. Additionally, another interesting study involving 134 nursing students was conducted in Jordan and concluded that the participants did not have a good knowledge of DM and as such, further education is needed (Tawalbeh et al, 2014). The ultimate goal of educational intervention is to help people with type 2 diabetes acquire the necessary knowledge and support in order to achieve better health by modifying their behavior and adopting a more positive attitude towards the disease (Polykandriotis & Kalogiannis, 2008).

Methods

The aim of the present study is to investigate the knowledge of Nursing Higher Education students and the knowledge of Public Vocational Training institutes' students (Nurse Assistants) about DM and its prevention, as well as the identification of the factors that affect the disease.

The research questions asked are:

1. What is the knowledge about DM?

2. What is the knowledge about disease prevention?

3. How demographic factors are related to the young people's knowledge?

The sample of the study consists of 269 individuals, students of Alexander Technological Educational Institute of Thessaloniki (N = 133) and students of certain Hellenic Public Vocational Training institutes for Nursing assistants (General Hospitals of Veria, Katerini, Xanthi and the general hospital "Papanikolaou" of Thessaloniki) (N = 136). The study would only exclude those who refused to participate in

the study. However, all students from all the Institutes (100%) responded to the sample.

In order to investigate the knowledge of nursing students and nurse assistants' students, a thorough study of the current time with a self-completed questionnaire was selected. Respondents were asked to answer 62 questions in a planned questionnaire, consisting of three parts. The questions were designed to be answered through a four-dimensional Likert-type scale. All questions were of a closed type and the respondent in all closed expressions was asked to state the degree of his / her agreement by choosing one of the answers a) "I fully agree" b) I agree c) I disagree d) I totally disagree ".

In the descriptive statistical analysis, variable frequency distributions, mean values, standard deviation (SD), and confidence intervals at level of 95% (CI) were carried out. In analytical statistics, the regularity of each variable was checked by the Kolmogorov - Smirnov criterion.

For correlations and average comparisons, the Pearson correlation coefficient and Student's t-test respectively were calculated. For variables that do not have a normal distribution, Spearman's and Mann-Whitney's non-parametric correlation coefficient tests were used. In comparison with variables with more than 2 classes, in cases where the distribution was normal, one-Way ANOVA was used and in cases where the distribution was not normal Kruskal-Wallis test was used.

All statistical hypotheses were also tested for a statistical significance level of $p < 0.05$. Cronbach Alpha internal cohesion factor was used to test the reliability of the measured scales of the measuring tools. From the correlation of the questions, during the analytical phase, it was shown that they are connected at a significant level, and the reliability test imprinted with the Cronbach Alpha internal cohesion factor, showed a very high coefficient a = 0.817.

From these questions, 4 new variables emerged. The general perception scale and 3 sub-scales (sub-scale of DM knowledge, sub-scale of knowledge of predisposing factors and sub-scale of attitudes towards DM). In the present paper, the results concerning the sub-scale of DM knowledge and the sub-scale of knowledge of predisposing factors, are presented.

The variables were structured as follows:

A. Dependent variables are the general scale and the sub-scales

B. Independent variables are demographic and somatometric features, living conditions, nutrition and exercise habits, alcohol use and smoking.

Results

Demographic Characteristics

The participants of this study were surveyed for age, gender, educational level and living conditions. Table 1 shows that the majority of the sample was female (N = 216, 80.3%), and regarding the age group of the participants, 44.2% (N = 119) was from 18 to 20 years old, 30.5% (N=82) was over 25 years old while 25.3% (N = 68) was from 21 to 25 years of age.

Additionally, 50.6% (N = 136) of the participants were students of Public Vocational Training Institutes (PVTI), while 49.4% (N = 133) were students of the Technological Educational Institute (TEI) of Thessaloniki. Finally, it emerged that 57.6% (N = 155) live with their parents while 42.4% (N = 114) live alone.

Somatometric data

Height MT 1.68 (SD ± 0.076, 95% CI: 1.67-1.69) M.p .: 65.81 (SD + 12.46, 95% CI: 64.31 - 67.31)

The distribution for the Body Mass Index (BMI) of the participants, from which we can see that the mean BMI is 23.11 (SD ± 3.71, 95% CI: 22.66 - 23.51) with a lower value of 16.5 and a higher that of 35.9 (Figure 1)

Table 2 shows that the respondents seem to have good knowledge of DM as they seem to agree with the proposals that constitute the scale (MM 36.71 with a maximum of 48). In addition, the resulting scale is credible as Cronbach's Alpha coefficient is 0.677.

Table 1 Frequencies and percentages (%) on the demographic characteristics of the sample

		Frequency	Percentage
Sex	Male	53	19,7%
	Female	216	80,3%
Age	18-20 years old	119	44,2%
	21-25 years old	68	25,3%
	Over 25 years old	82	30,5%
Education level	Student of TEI	133	49,4%
	Student of PVTI	136	50,6%
Living conditions	I live with my parents	155	57,6%
	I live alone	114	42,4%

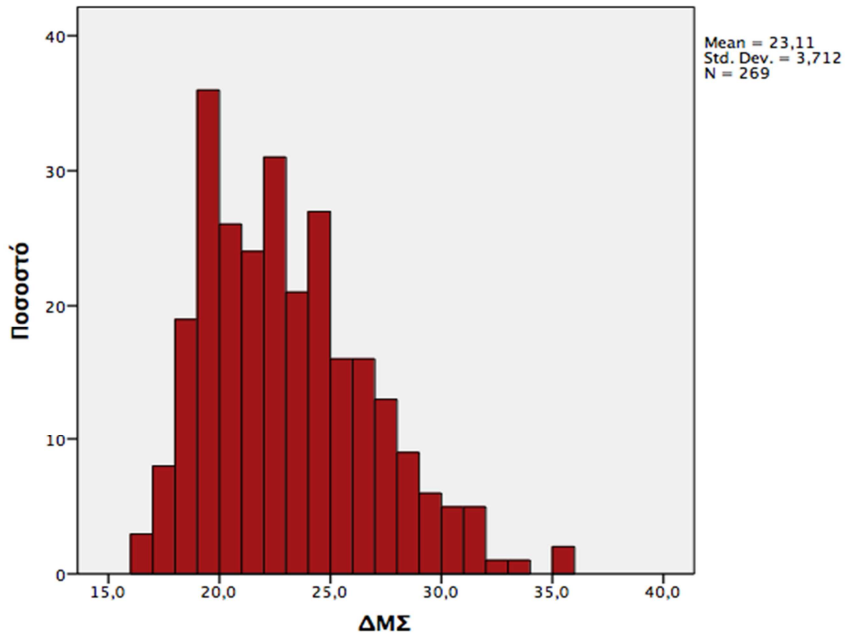


Figure 1 Histogram of frequencies for BMI

Scales' Characteristics

Table 2 Cronbach Alpha Index and descriptive measures of DM Subscale

Subscale 1	**Knowledge about DM (12 questions)**
Cronbach Alpha	0,677
N	269
X±SD	36,71 ± 4,37 (3,06-0,36)
Median	37,00 (3,08)
Min-Max	23-47 (1,91-3,91)

Table 3 Cronbach Alpha Index and Descriptive Measures of Subscale of Knowledge of Predisposing Factors

Subscale 2	Knowledge of Predisposing Factors of DM (14 questions)
Cronbach Alpha	0,734
N	268
X±SD	41,03 (2,93) ±4,032 (0,288)
Median	37,0000 (3,08)
Min-Max	25-51 (2,08- 4,25)

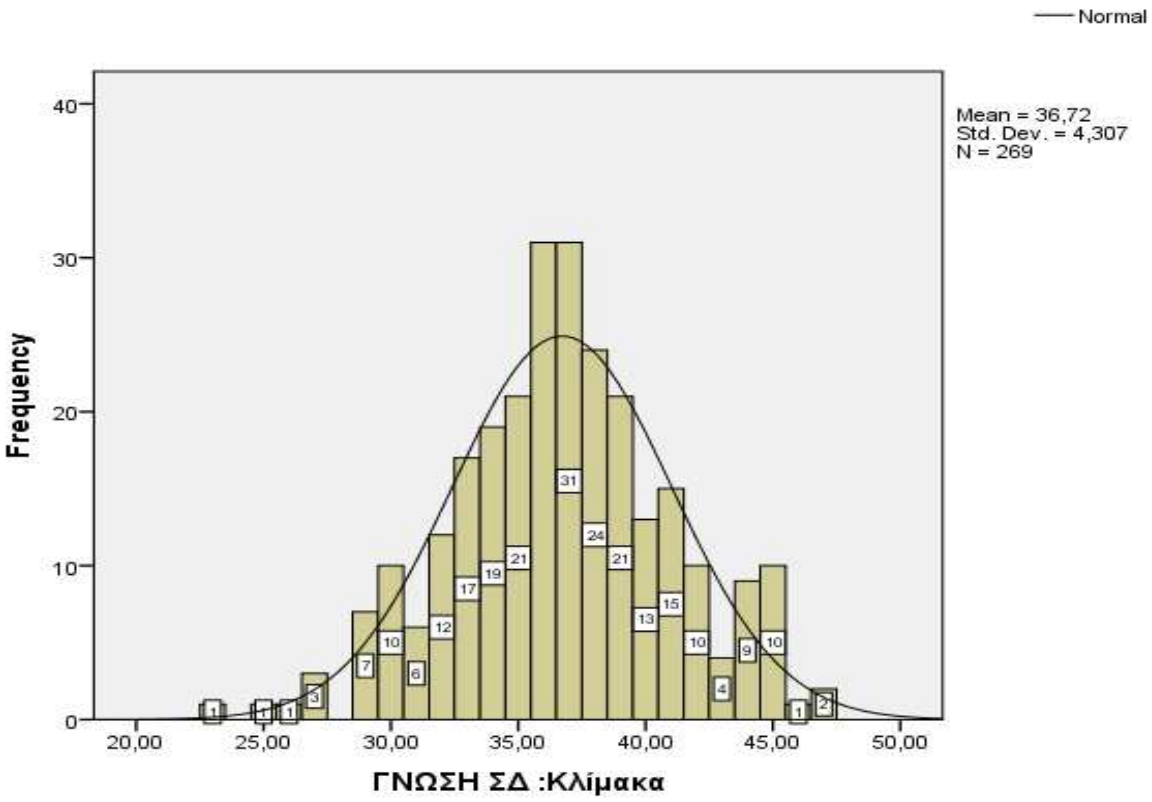


Figure 2 - DM Knowledge Frequency Histogram

Table 4- Verification of Normality - Kolmogorov Smirnov of queries that compose the DM knowledge subscale

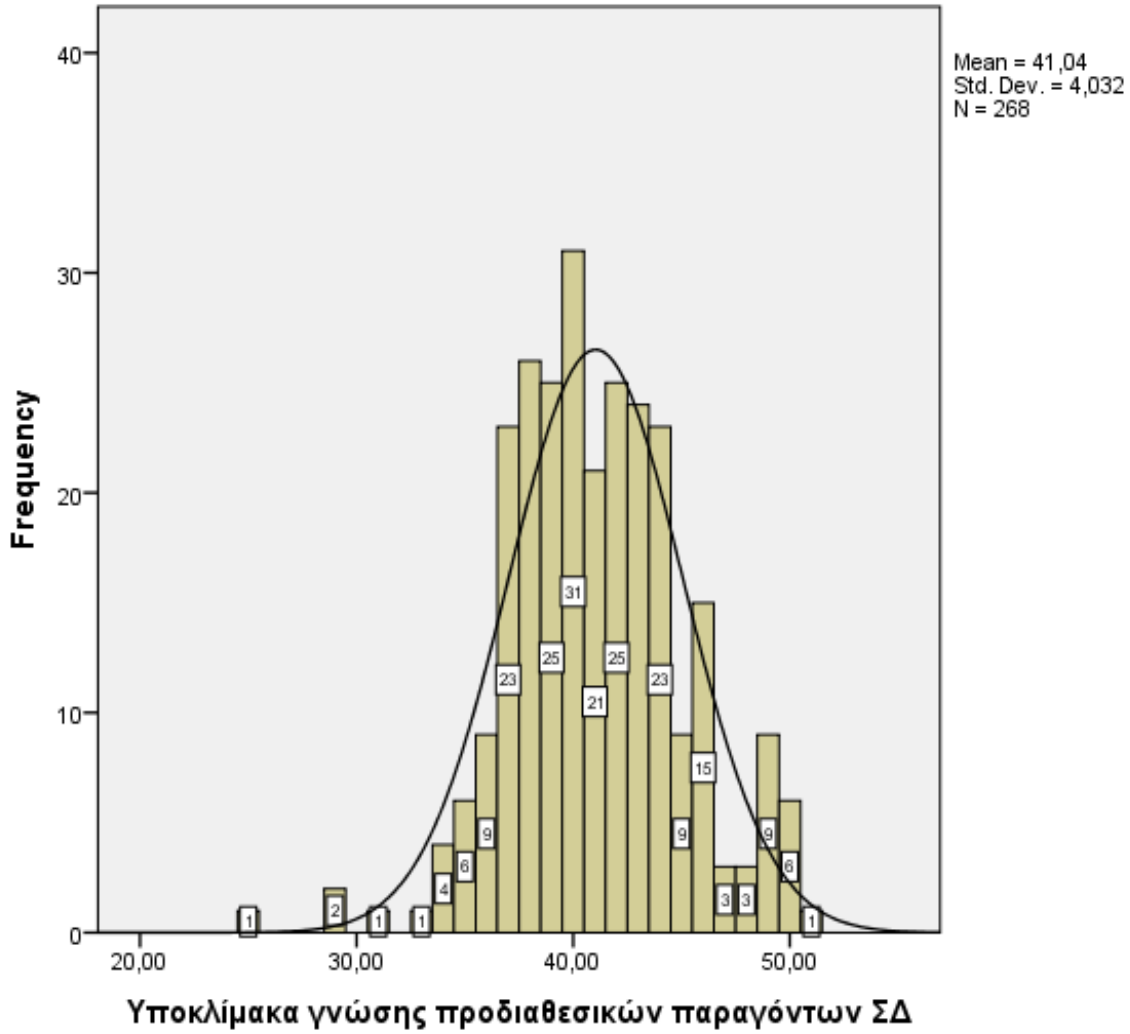
	Kolmogorov-Smirnov[a]		
	Statistic	Df	Sig.
There are several different types of diabetes mellitus	.287	269	.000
Insulin regulates blood sugar	.266	269	.000
Increased caloric intake increases the predisposition for DM II	.310	269	.000
A blood glucose level of 210mg / dl is very high	.314	269	.000
Body weight control reduces the risk of developing DM II	.270	269	.000
DM often causes poor circulation	.334	269	.000
Abrasions and wounds in patients with diabetes heal slowly	.251	269	.000
DM may harm the kidneys	.263	269	.000
DM may cause a lack of sensation in the legs and hands	.224	269	.000
DM is a transmissible disease (R)	.431	269	.000
Kidneys produce insulin (R)	.287	269	.000
Glycosylated hemoglobin is a test to be performed solely by people suffering from DM II (R)	.288	269	.000

a. Lilliefors Significance Correction

Table 5-Variables associated with the sub-scale of DM II knoweledge

Age– Kruskal Wallis (Chi-Square=26.350 P=0.000)	**Mann-Whitney U- p**	**M.T.**
18-20 years old (n= 119) - 21-25 years old (n=68)	*2965.00-0.002*	*35.2521-37.2353*
18-20 years old (n= 119)- Over 25 years old (n=82)	*2877.5-0.000*	*35.2521-38.4146*
21-25 *years old* (n=68)- Over 2 *years old* 5 (n=82)	2349.00-0.096	37.2353-38.4146
Do you know the Mediterranean diet?	**Mann-Whitney U-p**	**M.T.**
YES (n=121)- NO (n=126)	*1276.5-0.000*	*37.0810-32.6364*
If you answered positively (YES) to the previous question, do you think you are following the principles of the Mediterranean diet?	Mann-Whitney U-p	M.T.
YES (n=121)- NO (n=126)	*7556.0- P=0.026*	*37.5289-36.6508*
Do you eat ready-made processed food? Kruskal Wallis (Chi-Square=6.955 P=0.031)	**Mann-Whitney U-p**	**M.T.**
YES (n=132)- NO (n=23)	1247.5-0.172	36.0758-37.0000
Yes (n=132) - Sometimes (n=114)	***6117.5-0.011***	***36.0758-37.4035***
No (n=23)- Sometimes (n=114)	1306-0.977	37.0000-37.4035

Figure 3 Frequency Histogram of Predisposing Factors



Sub-*scale of knowledge concerning the predisposing factors of DM II*

Table 6 Verification of Normality - Kolmogorov Smirnov sub-scale of knowledge concerning predisposing factorsof DM II

	Kolmogorov-Smirnov[a]		
	Statistic	df	Sig.
Nutrition	.345	268	.000
Smoking	.227	268	.000
Alcohol use	.267	268	.000
Obesity	.349	268	.000
Anorexia	.302	268	.000
Osteoporosis	.362	268	.000
Lack of physical exercise	.277	268	.000
Heredity	.278	268	.000
High Blood Pressure	.256	268	.000
Pancreatitis	.249	268	.000
Pregnancy	.283	268	.000
Increased blood coagulation	.286	268	.000
Increased LDL cholesterol and triglycerides	.314	268	.000
Decreased HDL cholisterol	.306	268	.000
a. Lilliefors Significance Correction			

Table 7 Variables associated with the sub-scale of knowledge concerning the predisposing factors of DM		
Do you know the Mediterranean diet?	**Mann-Whitney U-p**	**M.T.**
YES (n=246)- NO (n=22)	***1722.5-0.05***	***41.23-38.77***
If you answered positively (YES) to the previous question, do you think you are following the principles of the Mediterranean diet?	**Mann-Whitney U-p**	**M.T.**
YES (n=120)- NO (n=148)	***7009-0.003***	***41.84-40.38***
Do you eat ready-made processed food? **Kruskal Wallis (Chi-Square=6.955 P=0.031)**	**Mann-Whitney U-p**	**M.T.**
Yes (n=132) - No (n=23)	1247.5-0.172	36.0758-37.0000
Yes (n=132)- Sometimes (n=114)	***6117.5-0.011***	***36.0758-37.4035***
No (n=23)- Sometimes (n=114)	1306-0.977	37.0000-37.4035

Table 3 shows that the respondents seem to have good knowledge of the predisposing factors of DM as they seem to agree with the proposals that constitute the scale (MM 41,03 with a maximum scale of 56). In addition, the resulting scale is credible as Cronbach's Alpha coefficient is 0.734.

Analytical statistics

Sub-scale of DM knowledge: Control of data's regularity on sub-scale of diabetes knowledge using the Kolmogorov-Smirnov test was conducted. The test results and frequency of sub-scale distribution are described below (Figure 2, Table 4)

From table 4 is obvious that the data of this study does not follow the normal distribution (Kolmogorov - Smirnov test p <0.003) and consequently non-parametric tests will be followed to investigate the existence of statistically significant relationships with the independent variables (Mann Whitney and Kruskal Wallis as well as Spearman's correlation factor.)

Table 5 shows that older students have more knowledge over the other groups. In addition, the respondents who say that they have knowledge of the Mediterranean diet tend to have more knowledge about DM than those who say they have no knowledge of the Mediterranean diet. Finally, the respondents who believe that they follow the Mediterranean diet seem to have more knowledge about DM than those who say they do not follow the Mediterranean diet while respondents who say they eat processed food from the trade tend to have less knowledge about

Discussion

This study explores the knowledge of nursing students in Tertiary education and the students of Public Vocational Training Institutes for Nurse assistants about DM and its prevention. This is a significant difference from other studies as most of them are addressed to the general population or to patients suffering from DM or health professionals with years of experience.Regarding the knowledge about DM II it appears, by the statistical analysis, that the respondents of this study have a high level of knowledge about DM II as they agree with the proposals that constitute the sub-scale. Based on the above results, it seems that students' education is satisfactory in terms of transmitting and preventing DM II. DM versus those who sometimes eat processed foods. All the above mentioned differences are statistically significant at the statistical significance level p <0.05.

Knowledge concerning the predisposing factors of DM II

Control of data's regularity of the data on the sub-scale concerning the predisposing factors of DM II using Kolmogorov-Smirnov test, was conducted. The test results and frequency of sub-scale distribution are described below (Figure 3, Table 6)

From the table 7 is obvious that our data does not follow the normal distribution and consequently the non-parametric Mann-Whitney and Kruskal Wallis tests will be followed to investigate the existence of statistically significant differences with the independent variables. It is apparent that the respondents who mention that they have knowledge of the Mediterranean diet seem to have more knowledge about the predisposing factors of DM II over those they say they do not have. In addition, the respondents who believe that they follow the principles of Mediterranean diet seem to have more knowledge concerning the predisposing factors of DM II versus those who do not follow the Mediterranean Diet. Finally, respondents who sometimes eat ready-made processed food appear to have more knowledge about the predisposing factors of DM II against those who respond that they eat regularly ready-made foods. The above differences are statistically significant at the statistical significance level p <0.05.

However, it is unclear whether this training was capable of encouraging participants to adopt a different lifestyle in order to reduce for themselves the risk of developing DM II. This is shown by the results of their dietary habits and exercise habits.

It is worthwhile to observe the replies to the phrase "The kidneys produce insulin", which is ranked seventh in the correct questionnaire response rates (74%) and the answers to the phrase "Abrasions and wounds in diabetic patients heal slowly", in which 87% of the sample responded correctly. In a similar study by Mumtaz et al (2009) to medical students in Pakistan, the percentage of the correct answers in the first phrase was 78%, while in the second

sentence the percentage of correct answers was 71%.

The phrase "Glycosylated hemoglobin is a test to be performed solely by people suffering from DM II " is at the worst place in the sub-scale of DM knowledge. It is known that HbA1c (glycosylated hemoglobin) is screening test. Early detection of DM through screening can help changing the natural history of the disease (Helen, Richard, Ann, 2007). It is noted that participants have some deficiencies in knowledge about the importance of screening.

With regard to the knowledge of young people on the disease's prevention, it was found that the respondents had a rather high level of knowledge about the prevention of DM II as they seem to agree with the predisposing factors that constitute the scale. Statistical analysis has shown that research participants tend to be more in agreement with the fact that obesity (95.9%) and nutrition (94.4%) are predisposing factors of the DM.

Recognition of risk factors for DM is vital for primary and secondary disease prevention (O'Connor et al., 2006). Obesity is the most well-known risk factor in the research participants. This is in agreement with the results of the Taha & Bella study (1998) which investigated the knowledge of causes and prevention of cardiovascular disease as well as in agreement with the study of Al. Shafaee et.al (2008) that conducted in general population and in which obesity was the most commonly reported risk factor for DM (35.8% of the sample).

In the study of Talat Naheed et al (2003), although participants knew that nutrition played an important role in managing diabetes, they were not aware of the type of food that diabetics should consume. This element was not studied in this study . Although the majority of participants know that unhealthy diet is a predisposition for DM II, 59.9% of the sample states that they often consume sweets and sugar, and half of the participants often consume processed foods. Psychosocial studies have shown that there is a discrepancy between knowledge, attitudes and behaviors (Hjelm et al., 2007). Furthermore, in a similar study by Trep et al (2010), in which the knowledge of medical and nursing students and medical and nursing graduates were studied, it was found that there was no progress in the knowledge of students from their student years and after their graduation.

Prevention is always better than therapy and many studies have shown that the benefits of exercise are crucial for the prevention of this metabolic disease. It is important that the students of this study appear to have sufficient knowledge about the importance of preventing DM II and were well informed about the fact that the physical activity could help the prevention of the onset of the disease.

In terms of demographic factors, statistical analysis showed that age is related to young people's knowledge of DM II, because participants aged over 25 have more knowledge compared to other age groups. Similarly, the study by Kumar et.al (2014) conducted between medical and nursing students showed that older students had a more positive attitude towards DM II. The older age groups might have studied for longer, so it makes sense to have more knowledge.

Knowledge about the Mediterranean diet was found to be related to the knowledge of young people about DM II and its prevention, as those who knew what the Mediterranean diet was and those who followed the dietary recommendations of the Mediterranean Diet had a higher level of knowledge about DM II and its prevention compared to those who did not know what the Mediterranean diet was and did not follow its recommendations. Also, the fewer processed foods the participants eat, the more knowledge they have about DM II and its prevention.

Overall, the study found that the participants have a relatively high level of knowledge. However, there is always space for improvement, if we are to improve care for people with DM II. These findings contradict with the results of other studies such as that of Kiavi et al (2006), Saljoudi et al (2008), according to which their participants showed a lack of knowledge about the predisposing factors of the DM II. On the contrary, the results of the present study are in line with the findings of the study conducted by Wee et al (2002), who found that the knowledge of the respondents was generally high, although they had certain deficits.

However, in the above studies the sample consisted of residents rather than nursing students. Moreover, in the studies of Drass et al

(1989), Shera et al. (2002), O'Brien et al (2003), Pubin et al (2007), Moshang and Jabbour (2007), Cullen and Buzek (2009), in which healthcare professionals were participated, the results showed that the participants had deficits in their knowledge about DM II and should therefore have additional training. Similarly, in the study of Al Wadaani (2012), in which the participants were graduate medical students, was also found that they had deficiencies in their knowledge about DM II and therefore its results are not consistent with the results of this study. In the same context, the study of Tawalbeh et al (2014) found that nursing students did not have a high level of knowledge about DM II and needed more education. Furthermore, in the study of Cullen and Buzek (2009), African-American and Spanish students lacked knowledge of predisposing factors and the prevention of DM II. Nevertheless, the findings of this research do not contradict the results gained by the study of Findlow and Dowell (2002), Muntaz et al (2009), according to which the participants had a relatively good level of knowledge about the DM II, although with some deficits.

An important limitation in this research is that the sample is small (269 people) and the vast majority are women (80.3%). As a consequence, these results cannot be generalized to the general population. Perhaps this limitation is also the reason why the results of this research are inconsistent with the results of many other studies.

Conclusions

In conclusion, it was found that the level of general perception of DM II and in particular the level of knowledge of the studied population can be characterized as sufficiently high. But it seems that their training is not enough in order the participants to adopt a different lifestyle and reduce the risk of developing DM for themselves as shown by the results of their dietary and exercise habits. For this reason, it would be beneficial the educational system to focus not only on educational methods and knowledge transfer processes, but also on methods of awareness, interaction and experiential approach to health issues.

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